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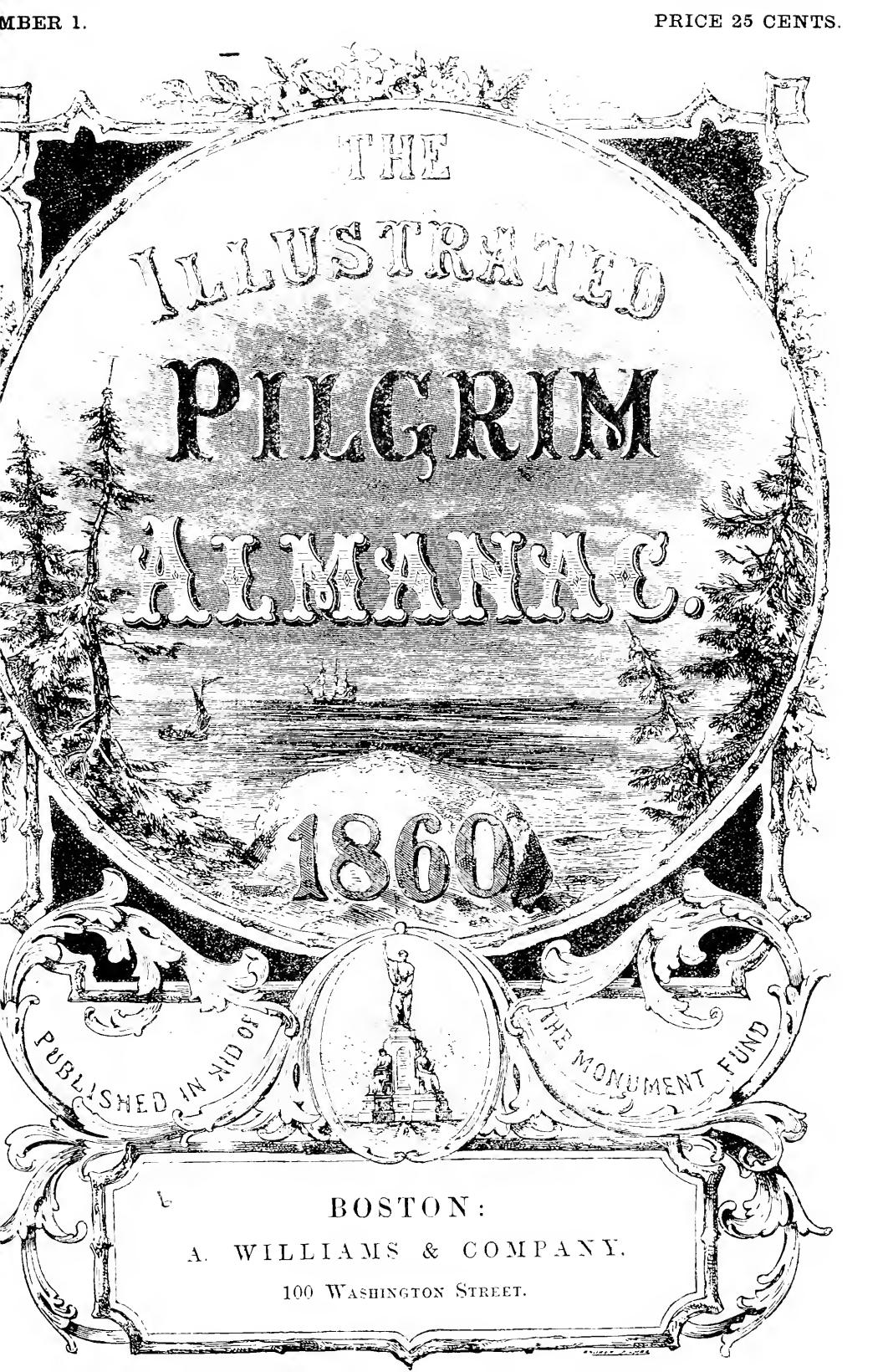


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# THE ILLUSTRATED PILGRIM VOLUME 1.

1860

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THE ILLUSTRATED

ALMANAC



SIGNING THE SOCIAL COMPACT.

HAMMATT BILLINGS AND GEORGE COOLIDGE,  
289 WASHINGTON STREET, BOSTON, MASS.

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# THE ILLUSTRATED PILGRIM ALMANAC, For the Year 1860.

NATHANIEL B. SHURTLEFF, GENERAL EDITOR.

JOHN D. RUNKLE, EDITOR OF ASTRONOMICAL DEPARTMENT.

CONTRIBUTED ARTICLES.—On METEOROLOGY, by Commander M. F. MAURY, Superintendent of the National Observatory, Washington. On the AMERICAN METHOD OF TRANSITS, by Prof. O. M. MITCHELL, Superintendent of the Cincinnati and Dudley Observatories.

## INTRODUCTORY NOTICE.

In introducing the ILLUSTRATED PILGRIM ALMANAC to the patronage of a discriminating community, there certainly would be wanting, on the part of the editor, a sufficiently just sensibility to the regard and appreciation of the opinion of the public mind, as well as a culpable disregard of the labors of others, were he not, upon its first appearance, to state in a few words the main objects of the enterprise, and the manner of its accomplishment, leaving to those who may make use of its pages to discern whether the endeavor is productive of any good, and to determine also whether in future years there shall be a repetition of the attempt.

It will be noticeable that in the present issue, while a large portion of the illustrations appertain to the great monuments of antiquity, and works of art of a more modern date and character, considerable attention has been given to such matters as relate particularly to the pilgrim fathers of New England,—such for instance as the scenes of their early abode at Leyden, the place of their embarkation in Delfhaven, and interesting views of their adopted home in Plymouth and its immediate neighborhood. To HAMMATT BILLINGS, Esq., of Boston, too well known by his past efforts to require commendation here, the public are indebted for these admirable designs and drawings, chiefly described by him in the accompanying historical sketches, and which have been engraved with great care and artistical ability. It is hoped that these efforts to delineate the footsteps of the forefathers will prove acceptable at this time, and supply a great popular want.

The astronomical phenomena have been calculated, and the calendar pages prepared, for different points of observation in the United States, at various degrees of latitude and longitude, with a view to correctness, not forgetting the essential requisit of convenience and intelligibility. They may consequently be relied upon as affording the usual information with the greatest possible degree of accuracy. The valuable and ably written articles on Meteorology, and the American Method of Transits, will sufficiently commend themselves to the notice of those interested in such matters.

As the subject of the different modes of computing time is so generally misunderstood, the editor has endeavored, in as condensed a manner as possible, to lay the matter again before the reader, in as simple a form as would be compatible with precision. This seemed the more necessary, inasmuch as all the dates given in the calendar pages, and in the several historical articles, are according to the Gregorian method, or New Style, of reckoning time. This fact will satisfactorily explain the discrepancies which may appear in certain dates when compared with other authorities.

In the calendar column headed "Memorabilia," will be found many data relating to the early history of the country, and of the revolutionary period; together with the dates of birth and decease of the Presidents of the United States, the Governors of Massachusetts under the Constitution, and of many of the early settlers of New England.

With these few words, the Pilgrim Almanac is committed to the kind regards of the public, with a respectful solicitation for proper indulgence, and with the humble hope that this first endeavor, originating with Mr. BILLINGS, in offering an American Illustrated Almanac, may not be altogether unacceptable and without some substantial benefit to the readers and to the enterprise in aid of which it is issued.

N. B. 3.

## ABSTRACT OF THE CALENDAR FOR 1860.

JAN. 1.	2 Sunday after Christmas.	APRIL 1.	Palm Sunday.	JULY 1.	4 Sunday after Trinity.	OCT. 1.	Monday.
2	3 Sunday after Epiphany.	2	Good Friday.	2	5 Sunday after Trinity.	2	18 Sunday after Trinity.
3	Plough Monday.	3	Easter Sunday.	3	6 Sunday after Trinity.	3	19 Sunday after Trinity.
4	2 Sunday after Epiphany.	4	East Sunday.	4	7 Sunday after Trinity.	4	20 Sunday after Trinity.
5	2 Sunday after Epiphany.	5	Low Sunday.	5	8 Sunday after Trinity.	5	21 Sunday after Trinity.
6	3 Sunday after Epiphany.	6	2 Sunday after Easter.	6	9 Sunday after Trinity.	6	22 Sunday after Trinity.
7	4 Sunday after Epiphany.	7	3 Sunday after Easter.	7	10 Sunday after Trinity.	7	23 Sunday after Trinity.
8	5 Sunday after Epiphany.	8	4 Sunday after Easter.	8	11 Sunday after Trinity.	8	24 Sunday after Trinity.
9	6 Sunday after Epiphany.	9	5 Sunday after Easter.	9	12 Sunday after Trinity.	9	25 Sunday after Trinity.
10	7 Sunday after Epiphany.	10	6 Sunday after Easter.	10	13 Sunday after Trinity.	10	26 Sunday after Trinity.
11	8 Sunday after Epiphany.	11	7 Sunday after Easter.	11	14 Sunday after Trinity.	11	27 Sunday after Trinity.
12	9 Sunday after Epiphany.	12	8 Sunday after Easter.	12	15 Sunday after Trinity.	12	28 Sunday after Trinity.
13	10 Sunday after Epiphany.	13	9 Sunday after Easter.	13	16 Sunday after Trinity.	13	29 Sunday after Trinity.
14	11 Sunday after Epiphany.	14	10 Sunday after Easter.	14	17 Sunday after Trinity.	14	30 Sunday after Trinity.
15	12 Sunday after Epiphany.	15	11 Sunday after Easter.	15	18 Sunday after Trinity.	15	31 Sunday after Trinity.
16	13 Sunday after Epiphany.	16	12 Sunday after Easter.	16	19 Sunday after Trinity.	16	1 Sunday in Advent.
17	14 Sunday after Epiphany.	17	13 Sunday after Easter.	17	20 Sunday after Trinity.	17	2 Sunday in Advent.
18	15 Sunday after Epiphany.	18	14 Sunday after Easter.	18	21 Sunday after Trinity.	18	3 Sunday in Advent.
19	16 Sunday after Epiphany.	19	15 Sunday after Easter.	19	22 Sunday after Trinity.	19	4 Sunday in Advent.
20	17 Sunday after Epiphany.	20	16 Sunday after Easter.	20	23 Sunday after Trinity.	20	5 Sunday in Advent.
21	18 Sunday after Epiphany.	21	17 Sunday after Easter.	21	24 Sunday after Trinity.	21	6 Sunday in Advent.
22	19 Sunday after Epiphany.	22	18 Sunday after Easter.	22	25 Sunday after Trinity.	22	7 Sunday in Advent.
23	20 Sunday after Epiphany.	23	19 Sunday after Easter.	23	26 Sunday after Trinity.	23	8 Sunday in Advent.
24	21 Sunday after Epiphany.	24	20 Sunday after Easter.	24	27 Sunday after Trinity.	24	9 Sunday in Advent.
25	22 Sunday after Epiphany.	25	21 Sunday after Easter.	25	28 Sunday after Trinity.	25	10 Sunday in Advent.
26	23 Sunday after Epiphany.	26	22 Sunday after Easter.	26	29 Sunday after Trinity.	26	11 Sunday in Advent.
27	24 Sunday after Epiphany.	27	23 Sunday after Easter.	27	30 Sunday after Trinity.	27	12 Sunday in Advent.
28	25 Sunday after Epiphany.	28	24 Sunday after Easter.	28	31 Sunday after Trinity.	28	13 Sunday in Advent.
29	26 Sunday after Epiphany.	29	25 Sunday after Easter.	29	1 Sunday in Advent.	29	14 Sunday in Advent.
30	27 Sunday after Epiphany.	30	26 Sunday after Easter.	30	2 Sunday in Advent.	30	15 Sunday in Advent.
31	28 Sunday after Epiphany.	31	27 Sunday after Easter.	31	3 Sunday in Advent.	31	16 Sunday in Advent.
32	29 Sunday after Epiphany.	32	28 Sunday after Easter.	32	4 Sunday in Advent.	32	17 Sunday in Advent.
33	30 Sunday after Epiphany.	33	29 Sunday after Easter.	33	5 Sunday in Advent.	33	18 Sunday in Advent.
34	31 Sunday after Epiphany.	34	30 Sunday after Easter.	34	6 Sunday in Advent.	34	19 Sunday in Advent.
35	32 Sunday after Epiphany.	35	31 Sunday after Easter.	35	7 Sunday in Advent.	35	20 Sunday in Advent.
36	33 Sunday after Epiphany.	36	32 Sunday after Easter.	36	8 Sunday in Advent.	36	21 Sunday in Advent.
37	34 Sunday after Epiphany.	37	33 Sunday after Easter.	37	9 Sunday in Advent.	37	22 Sunday in Advent.
38	35 Sunday after Epiphany.	38	34 Sunday after Easter.	38	10 Sunday in Advent.	38	23 Sunday in Advent.
39	36 Sunday after Epiphany.	39	35 Sunday after Easter.	39	11 Sunday in Advent.	39	24 Sunday in Advent.
40	37 Sunday after Epiphany.	40	36 Sunday after Easter.	40	12 Sunday in Advent.	40	25 Sunday in Advent.
41	38 Sunday after Epiphany.	41	37 Sunday after Easter.	41	13 Sunday in Advent.	41	26 Sunday in Advent.
42	39 Sunday after Epiphany.	42	38 Sunday after Easter.	42	14 Sunday in Advent.	42	27 Sunday in Advent.
43	40 Sunday after Epiphany.	43	39 Sunday after Easter.	43	15 Sunday in Advent.	43	28 Sunday in Advent.
44	41 Sunday after Epiphany.	44	40 Sunday after Easter.	44	16 Sunday in Advent.	44	29 Sunday in Advent.
45	42 Sunday after Epiphany.	45	41 Sunday after Easter.	45	17 Sunday in Advent.	45	30 Sunday in Advent.
46	43 Sunday after Epiphany.	46	42 Sunday after Easter.	46	18 Sunday in Advent.	46	31 Sunday in Advent.
47	44 Sunday after Epiphany.	47	43 Sunday after Easter.	47	19 Sunday in Advent.	47	1 Sunday in Advent.
48	45 Sunday after Epiphany.	48	44 Sunday after Easter.	48	20 Sunday in Advent.	48	2 Sunday in Advent.
49	46 Sunday after Epiphany.	49	45 Sunday after Easter.	49	21 Sunday in Advent.	49	3 Sunday in Advent.
50	47 Sunday after Epiphany.	50	46 Sunday after Easter.	50	22 Sunday in Advent.	50	4 Sunday in Advent.
51	48 Sunday after Epiphany.	51	47 Sunday after Easter.	51	23 Sunday in Advent.	51	5 Sunday in Advent.
52	49 Sunday after Epiphany.	52	48 Sunday after Easter.	52	24 Sunday in Advent.	52	6 Sunday in Advent.
53	50 Sunday after Epiphany.	53	49 Sunday after Easter.	53	25 Sunday in Advent.	53	7 Sunday in Advent.
54	51 Sunday after Epiphany.	54	50 Sunday after Easter.	54	26 Sunday in Advent.	54	8 Sunday in Advent.
55	52 Sunday after Epiphany.	55	51 Sunday after Easter.	55	27 Sunday in Advent.	55	9 Sunday in Advent.
56	53 Sunday after Epiphany.	56	52 Sunday after Easter.	56	28 Sunday in Advent.	56	10 Sunday in Advent.
57	54 Sunday after Epiphany.	57	53 Sunday after Easter.	57	29 Sunday in Advent.	57	11 Sunday in Advent.
58	55 Sunday after Epiphany.	58	54 Sunday after Easter.	58	30 Sunday in Advent.	58	12 Sunday in Advent.
59	56 Sunday after Epiphany.	59	55 Sunday after Easter.	59	1 Sunday in Advent.	59	13 Sunday in Advent.
60	57 Sunday after Epiphany.	60	56 Sunday after Easter.	60	2 Sunday in Advent.	60	14 Sunday in Advent.
61	58 Sunday after Epiphany.	61	57 Sunday after Easter.	61	3 Sunday in Advent.	61	15 Sunday in Advent.
62	59 Sunday after Epiphany.	62	58 Sunday after Easter.	62	4 Sunday in Advent.	62	16 Sunday in Advent.
63	60 Sunday after Epiphany.	63	59 Sunday after Easter.	63	5 Sunday in Advent.	63	17 Sunday in Advent.
64	61 Sunday after Epiphany.	64	60 Sunday after Easter.	64	6 Sunday in Advent.	64	18 Sunday in Advent.
65	62 Sunday after Epiphany.	65	61 Sunday after Easter.	65	7 Sunday in Advent.	65	19 Sunday in Advent.
66	63 Sunday after Epiphany.	66	62 Sunday after Easter.	66	8 Sunday in Advent.	66	20 Sunday in Advent.
67	64 Sunday after Epiphany.	67	63 Sunday after Easter.	67	9 Sunday in Advent.	67	21 Sunday in Advent.
68	65 Sunday after Epiphany.	68	64 Sunday after Easter.	68	10 Sunday in Advent.	68	22 Sunday in Advent.
69	66 Sunday after Epiphany.	69	65 Sunday after Easter.	69	11 Sunday in Advent.	69	23 Sunday in Advent.
70	67 Sunday after Epiphany.	70	66 Sunday after Easter.	70	12 Sunday in Advent.	70	24 Sunday in Advent.
71	68 Sunday after Epiphany.	71	67 Sunday after Easter.	71	13 Sunday in Advent.	71	25 Sunday in Advent.
72	69 Sunday after Epiphany.	72	68 Sunday after Easter.	72	14 Sunday in Advent.	72	26 Sunday in Advent.
73	70 Sunday after Epiphany.	73	69 Sunday after Easter.	73	15 Sunday in Advent.	73	27 Sunday in Advent.
74	71 Sunday after Epiphany.	74	70 Sunday after Easter.	74	16 Sunday in Advent.	74	28 Sunday in Advent.
75	72 Sunday after Epiphany.	75	71 Sunday after Easter.	75	17 Sunday in Advent.	75	29 Sunday in Advent.
76	73 Sunday after Epiphany.	76	72 Sunday after Easter.	76	18 Sunday in Advent.	76	30 Sunday in Advent.
77	74 Sunday after Epiphany.	77	73 Sunday after Easter.	77	19 Sunday in Advent.	77	1 Sunday in Advent.
78	75 Sunday after Epiphany.	78	74 Sunday after Easter.	78	2 Sunday in Advent.	78	2 Sunday in Advent.
79	76 Sunday after Epiphany.	79	75 Sunday after Easter.	79	3 Sunday in Advent.	79	3 Sunday in Advent.
80	77 Sunday after Epiphany.	80	76 Sunday after Easter.	80	4 Sunday in Advent.	80	4 Sunday in Advent.
81	78 Sunday after Epiphany.	81	77 Sunday after Easter.	81	5 Sunday in Advent.	81	5 Sunday in Advent.
82	79 Sunday after Epiphany.	82	78 Sunday after Easter.	82	6 Sunday in Advent.	82	6 Sunday in Advent.
83	80 Sunday after Epiphany.	83	79 Sunday after Easter.	83	7 Sunday in Advent.	83	7 Sunday in Advent.
84	81 Sunday after Epiphany.	84	80 Sunday after Easter.	84	8 Sunday in Advent.	84	8 Sunday in Advent.
85	82 Sunday after Epiphany.	85	81 Sunday after Easter.	85	9 Sunday in Advent.	85	9 Sunday in Advent.
86	83 Sunday after Epiphany.	86	82 Sunday after Easter.	86	10 Sunday in Advent.	86	10 Sunday in Advent.
87	84 Sunday after Epiphany.	87	83 Sunday after Easter.	87	11 Sunday in Advent.	87	11 Sunday in Advent.
88	85 Sunday after Epiphany.	88	84 Sunday after Easter.	88	12 Sunday in Advent.	88	12 Sunday in Advent.
89	86 Sunday after Epiphany.	89	85 Sunday after Easter.	89	13 Sunday in Advent.	89	13 Sunday in Advent.
90	87 Sunday after Epiphany.	90	86 Sunday after Easter.	90	14 Sunday in Advent.	90	14 Sunday in Advent.
91	88 Sunday after Epiphany.	91	87 Sunday after Easter.	91	15 Sunday in Advent.	91	15 Sunday in Advent.
92	89 Sunday after Epiphany.	92	88 Sunday after Easter.	92	16 Sunday in Advent.	92	16 Sunday in Advent.
93	90 Sunday after Epiphany.	93	89 Sunday after Easter.	93	17 Sunday in Advent.	93	17 Sunday in Advent.
94	91 Sunday after Epiphany.	94	90 Sunday after Easter.	94	18 Sunday in Advent.	94	18 Sunday in Advent.
95	92 Sunday after Epiphany.	95	91 Sunday after Easter.	95	19 Sunday in Advent.	95	19 Sunday in Advent.
96	93 Sunday after Epiphany.	96	92 Sunday after Easter.	96	20 Sunday in Advent.	96	20 Sunday in Advent.
97	94 Sunday after Epiphany.	97	93 Sunday after Easter.	97	21 Sunday in Advent.	97	21 Sunday in Advent.
98	95 Sunday after Epiphany.	98	94 Sunday after Easter.	98	22 Sunday in Advent.	98	22 Sunday in Advent.
99	96 Sunday after Epiphany.	99	95 Sunday after Easter.	99	23 Sunday in Advent.	99	23 Sunday in Advent.
100	97 Sunday after Epiphany.	100	96 Sunday after Easter.	100	24 Sunday in Advent.	100	24 Sunday in Advent.
101	98 Sunday after Epiphany.	101	97 Sunday after Easter.	101	25 Sunday in Advent.	101	25 Sunday in Advent.
102	99 Sunday after Epiphany.	102	98 Sunday after Easter.	102	26 Sunday in Advent.	102	26 Sunday in Advent.
103	100 Sunday after Epiphany.	103	99 Sunday after Easter.	103	27 Sunday in Advent.	103	27 Sunday in Advent.
104	101 Sunday after Epiphany.	104	100 Sunday after Easter.	104	28 Sunday in Advent.	104	28 Sunday in Advent.
105	102 Sunday after Epiphany.	105	101 Sunday after Easter.	105	29 Sunday in Advent.	105	29 Sunday in Advent.
106	103 Sunday after Epiphany.	106	102 Sunday after Easter.	106	30 Sunday in Advent.	106	30 Sunday in Advent.
107	104 Sunday after Epiphany.	107	103 Sunday after Easter.	107	1 Sunday in Advent.	107	1 Sunday in Advent.
108	105 Sunday after Epiphany.	108	104 Sunday after Easter.	108	2 Sunday in Advent.	108	2 Sunday in Advent.
109	106 Sunday after Epiphany.	109	105 Sunday after Easter.	109	3 Sunday in Advent.	109	3 Sunday in Advent.
110	107 Sunday after Epiphany.	110	106 Sunday after Easter.	110	4 Sunday in Advent.	110	4 Sunday in Advent.
111	108 Sunday after Epiphany.	111	107 Sunday after Easter.	111	5 Sunday in Advent.	111	5 Sunday in Advent.
112	109 Sunday after Epiphany.	112	108 Sunday after Easter.	112	6 Sunday in Advent.	112	6 Sunday in Advent.
113	110 Sunday after Epiphany.	113	109 Sunday after Easter.	113	7 Sunday in Advent.	113	7 Sunday in Advent.
114	111 Sunday after Epiphany.	114	110 Sunday after Easter.	114	8 Sunday in Advent.	114	8 Sunday in Advent.
115	112 Sunday after Epiphany.	115	111 Sunday after Easter.	115	9 Sunday in Advent.	115	9 Sunday in Advent.
116	113 Sunday after Epiphany.	116	112 Sunday after Easter.	116	10 Sunday in Advent.	116	10 Sunday in Advent.
117	114 Sunday after Epiphany.	117	113 Sunday after Easter.	117	11 Sunday in Advent.	117	11 Sunday in Advent.
118	115 Sunday after Epiphany.	118	114 Sunday after Easter.	118	12 Sunday in Advent.	118	12 Sunday in Advent.
119	116 Sunday after Epiphany.	119	115 Sunday after Easter.	119	13 Sunday in Advent.	119	13 Sunday in Advent.
120	117 Sunday after Epiphany.	120	116 Sunday after Easter.	120	14 Sunday in Advent.	120	14 Sunday in Advent.
121	118 Sunday after Epiphany.	121	117 Sunday after Easter.	121	15 Sunday in Advent.	121	15 Sunday in Advent.
122	119 Sunday after Epiphany.	122	118 Sunday after Easter.	122	16 Sunday in Advent.	122	16 Sunday in Advent.
123	120 Sunday after Epiphany.	123	119 Sunday after Easter.	123	17 Sunday in Advent.	123	17 Sunday in Advent.
124	121 Sunday after Epiphany.	124	120 Sunday after Easter.	124	18 Sunday in Advent.	124	18 Sunday in Advent.
125	122 Sunday after Epiphany.	125	121 Sunday after Easter.	125	19 Sunday in Advent.	125	19 Sunday in Advent.
126	123 Sunday after Epiphany.	126	122 Sunday after Easter.	126	20 Sunday in Advent.	126	20 Sunday in Advent.
127	124 Sunday after Epiphany.	127	123 Sunday after Easter.	127	21 Sunday in Advent.	127	21 Sunday in Advent.
128	125 Sunday after Epiphany.	128	124 Sunday after Easter.	128	22 Sunday in Advent.	128	22 Sunday in Advent.
129	126 Sunday after Epiphany.	129	125 Sunday after Easter.	129	23 Sunday in Advent.	129	23 Sunday in Advent.
130	127 Sunday after Epiphany.	130	126 Sunday after Easter.	130	24 Sunday in Advent.	130	24 Sunday in Advent.
131	128 Sunday after Epiphany.	131	127 Sunday after Easter.	131	25 Sunday in Advent.	131	25 Sunday in Advent.
132	129 Sunday after Epiphany.	132	128 Sunday after Easter.	132	26 Sunday in Advent.	132	26 Sunday in Advent.
133	130 Sunday after Epiphany.	133	129 Sunday after Easter.	133	27 Sunday in Advent.	133	27 Sunday in Advent.
134	131 Sunday after Epiphany.	134	130 Sunday after Easter.	134	28 Sunday in Advent.	134	28 Sunday in Advent.
135	132 Sunday after Epiphany.	135	131 Sunday after Easter.	135	29 Sunday in Advent.	135	29 Sunday in Advent.
136	133 Sunday after Epiphany.	136	132 Sunday after Easter.	136	30 Sunday in Advent.	136	30 Sunday in Advent.
137	134 Sunday after Epiphany.	137	133 Sunday after Easter.	137	1 Sunday in Advent.	137	1 Sunday in Advent.
138	135 Sunday after Epiphany.	138	134 Sunday after Easter.	138	2 Sunday in Advent.	138	2 Sunday in Advent.
139	136 Sunday after Epiphany.	139	135 Sunday after Easter.	139	3 Sunday in Advent.	139	3 Sunday in Advent.
140	137 Sunday after Epiphany.	140	136 Sunday after Easter.	140	4 Sunday in Advent.	140	4 Sunday in Advent.
141	138 Sunday after Epiphany.	141	137 Sunday after Easter.	141	5 Sunday in Advent.	141	5 Sunday in Advent.
142	139 Sunday after Epiphany.	142	138 Sunday after Easter.	142	6 Sunday in Advent.	142	6 Sunday in Advent.
143	140 Sunday after Epiphany.	143	139 Sunday after Easter.	143	7 Sunday in Advent.	143	7 Sunday in Advent.
144	141 Sunday after Epiphany.	144	140 Sunday after Easter.	144	8 Sunday in Advent.	144	8 Sunday in Advent.
145	142 Sunday after Epiphany.	145	141 Sunday after Easter.	145	9 Sunday in Advent.	145	9 Sunday in Advent.
146	143 Sunday after Epiphany						

## CALENDAR AND ASTRONOMICAL PHENOMENA FOR THE YEAR 1860.

### I. CHRONOLOGICAL ERAS.

The year 1860, which comprises the latter part of the 84th and the beginning of the 85th year of the Independence of the United States of America, corresponds to The year 6573 of the Julian Period;

" 7368-69 of the Byzantine Era;

" 5620-21 of the Jewish Era;

" 2613 since the foundation of Rome, according to Varro;

" 2607 since the beginning of the Era of Nabonassar, which has been assigned to Wednesday, the 26th of February, of the 3997th year of the Julian Period, corresponding according to the chronologists to the 747th, and according to the astronomer to the 746th year before the birth of Christ;

" 2636 of the Olympiads, or the fourth year of the 659th Olympiad, commencing July, 1857, if we fix the Era of the Olympiads at 773 years before Christ, or near the beginning of July of the year 3938 of the Julian Period;

" 2172 of the Grecian Era, or the Era of the Seleucidae;

" 1576 of the Era of Diocletian;

" 1277 of the Mohammedan Era, or the Era of the Hegira, which begins on the 20th of July, 1860.

" 1860, January 1st, is the 2,400,411th day since the commencement of the Julian Period.

### II. CHRONOLOGICAL CYCLES.

Dominical Letters, A G Solar Cycle, 21  
Epact, 7 Ronan Indiction, 3  
Lunar Cycle, or Golden Julian Period, 6573  
Number, 18

### III. ASPECTS AND NOTATIONS.

◊ Denotes Conjunction, or the same Longitude or Right Ascension.

□ Denotes Quadrature, or differing 90° in Longitude or Right Ascension.

g Denotes Opposition, or differing 180° in Longitude or Right Ascension.

Ω Denotes Ascending Node, or point through which the moon or a planet comes above the plane of the earth's orbit.

Ω Denotes Descending Node, or point through which the moon or a planet goes below the plane of the earth's orbit.

° Degrees. ' Minutes, or 60ths of a degree. " Seconds, or 60ths of a minute. h. Hours. m. Minutes, or 60ths of an hour. s. Seconds, or 60ths of a minute.

### IV. SIGNS OF THE ZODIAC AND SEASONS.

Spring	1. ♈ Aries.	Autumn	7. ♐ Libra.
	2. ♉ Taurus.		8. ♑ Scorpio.
signs.	3. ♊ Gemini.	signs.	9. ♋ Sagittarius.
Summer	4. ♋ Cancer.	Winter	10. ♑ Capricornus
signs.	5. ♌ Leo.	signs.	11. ♏ Aquarius.
	6. ♐ Virgo.	signs.	12. ♑ Pisces.

### V. BEGINNING AND LENGTH OF THE SEASONS IN 1860.

		Washington time, d.	h. m.
Sun enters ♐ and Winter begins,	'59, Dec. 22	2 53, A.M.	
" " ♈ Spring	'60, Mar. 20	3 56, A.M.	
" " ♉ Summer	" June 21	2 34, A.M.	
" " ♋ Autumn	" Sept. 22	2 45, P.M.	
" " ♑ Winter	" Dec. 21	8 33, A.M.	
Sun will be in the Winter signs,	89 1 3		
" " " Spring	92 22 38		
" " " Summer	93 0 11		
" " " Autumn	90 5 48		
Sun North of Equator (Spring and Sum'r),	185 22 49		
" South (Winter " Aut'mn),	179 6 51		
Length of the tropical year, beginning at the Winter solstice, 1859, and ending at the Winter solstice of 1860,	365 5 40		
Mean length of tropical year,	365 5 49		

### VI. SYMBOLS OF THE SUN, MOON, AND PLANETS.

○ Sun.	⊕ or ♀ Earth.
● New Moon.	♂ Mars.
○ First quarter of Moon.	♃ Jupiter.
○ Full Moon.	♄ Saturn.
○ Last quarter of Moon.	♁ Uranus.
○ Mercury.	♂ Neptune.
○ Venus.	

The symbol of an Asteroid is a circle enclosing its number.

### VII. ECLIPSES. See pages 31 and 32.

### NOTE ON THE CALENDAR.

The risings or settings of the four planets, usually visible to the naked eye, are given for the first and sixteenth day of each month, and for the latitude of New York City; but for other times and places in the United States they will be sufficiently accurate for all practical purposes. Those risings and settings which occur during the day time are omitted. Mercury is farthest west from the sun on Jan. 3, April 39, Aug. 27, and Dec. 15, at which times it will rise and set before the sun, and is then a "morning star;" on March 15, July 12, and Nov. 6, the planet is farthest east from the sun, and rises and sets after him, when it is an "evening star." At about these times, therefore, the planet must be sought in the east just before sunrise, or in the west just after sunset, at from 18° to 27° distance from the sun; and those who would see it must seek it under the most favorable circumstances.

"Star-gazers" will find an opera glass of large field, magnifying about three times, a decided assistance. The risings and settings of the Sun and Moon are given for the latitudes of Montreal, Boston, New York City, Washington, and Charleston. If they are desired for the nearest minute on any intermediate parallel of latitude, it will be easy to find the proper proportional part of the difference between the computed times on the two adjacent parallels, and add or subtract it as the case may require.

### OLD AND NEW STYLE.

The ancients had various methods of computing time. The most enlightened determined the length of the year by the amount of time taken by the earth in its periodical passage around the sun, calling the period thus adopted as the unit of measure of time a solar year; and divided the year thus obtained into months according nearly with the orbital motion of the moon. A revolution of the earth on its axis has universally served as the basis of all measures of time, and is the only measure of a day.

Twelve lunar months are not enough for an exact solar year, and thirteen are too many; 365 days are also too few, and 366 exceed the true year. These facts were noticed by Julius Caesar, who, considering 365 days and 6 hours to be the true length of a year, corrected the error in the calendar somewhat by constituting every fourth year to consist of 366 days, and the intermediate years of 365 days each. The long or leap years, which had an intercalary day each, were always known, by being exact multiples of four. This calendar has been generally designated as the Julian, and the mode of reckoning time by it is now called the OLD STYLE.

As the Julian Calendar made the year about eleven minutes too long, an error of ten days was produced in the calendar during the period that intervened between the time of the Council of Nice in the year 325, and the time of Pope Gregory XIII, who was advanced to the papal chair in 1572. On this account Gregory undertook a reformation of the calendar, which he effected in 1582, and which was almost immediately adopted in countries where papacy prevailed. In order to obviate the error which had arisen it was ordained that the year 1582 should consist of 365 days only, and that TEN days, between the 4th and 15th of October, should be thrown out of the calendar of that year; and also, to prevent further irregularity, that no year terminating a century should be bissextile, excepting each fourth of such years. Three days are thus retrenched in every four hundred years, because the lapse of eleven minutes for every year makes very nearly three days in that period; leaving an error of one day only in about 5200 years. The alteration caused by this reformation produced what is commonly termed the Gregorian

Calendar, and the mode of reckoning time called the Roman or NEW STYLE.

It will assist the memory by observing that when a year ending with 00 is divisible by 400 without a remainder, it is leap year; and, when there is a remainder, the year consists of 365 days only. All other years in the century divisible by 4 are likewise leap years; and consequently have two letters in the Dominical Tables, the first being for January and February, and the second for the other months of the year. All years which are not leap years begin and end with the same day of the week, and consequently each successive year commences one day later in the week, except in leap years, when the difference is two days.

The new style of reckoning time was not adopted in Great Britain and its colonies until 1752, when the necessary correction, for obvious reasons, had increased one more day. From the time of the Gregorian reformation of the calendar in 1582, to the year 1639 inclusive, the difference of style was 118 days; but, as the year 1700 became a common year, instead of being a leap year, by a provision of new style, containing only 365 days, whereas the same year contained 366 days by old style, the difference became 119 days. In reducing this error, it became necessary to take eleven days from the calendar; which was effected by calling the 31st day of September the 11th. The difference of the number of days requisite in different countries for reducing old style to new, has been the cause of many mistakes, it not being noticed that the dates of events happening in different countries require amounts of correction irrespective of the time of their occurrence. For example.—The Pilgrim Fathers of New England selected Plymouth as their place of residence on Monday the 11th day of December, 1620, old style; which corresponds in new style with Monday December 21, 1620, and not with December 22, as was erroneously adopted at Plymouth in 1765, at the first celebration of that event. This error arose by adopting the correction of eleven days, the proper correction for events occurring between the years 1639 and 1800; it not being considered that this event happened in the previous century, when ten days only were required.

The reader is requested to take particular notice that all dates given in this Almanac are in NEW STYLE, unless otherwise mentioned.

#### COMMENCEMENT OF THE YEAR.

By the reformation of the calendar by Gregory, the year began on the first day of January; and consequently, whenever and wherever the new style of reckoning time was adopted, then and there the year commenced on this day.

Previous to the use of the Gregorian Calendar, the years had different days of beginning at various times in the same and different countries, and occasionally at the same time in the same country. In most countries it began on one of the following days:—

Christmas-day, the 25th of December;

Circumcision-day, the 1st of January;

Conception-day, the 25th of March; and

Easter-day, the day of the Resurrection of our Lord.

In England, in the seventh, and so late as the thirteenth century, the year began on Christmas-day; but in the twelfth century the Anglican Church commenced the year on the 25th of March, as did also the civilians of the fourteenth century. This continued until 1752, the time of adoption of the new style. By this it appears that two modes of reckoning the commencement of the year have generally existed in Great Britain and its colonies, causing what are called the CIVIL, ECCLÆSTICAL, or L. & V. Y. Y. and the HISTORICAL Y. Y. The last named of these has commenced on the 1st of January for a long period of time.

In order to prevent, as far as possible, the occurrence of errors by the use of two commencements of the year, it is now usual to annex the date of the Historical to that of the Legal Year, when alluding to any day between the 1st of January and the 25th of March previous to 1752; thus, — 10 Jan. 1624; or 10 Jan. 1625; or 10 Jan. 1621-2. When double-dating occurs, the upper or first figure indicates the Legal, and the lower or last the Historical Year. The last of these is the year used in the present computation.

Double-dating was necessarily used always in referring to time between the last day of February and the 25th of March, when the year commenced on the latter; otherwise, there would have been an impossibility in knowing for what year the date was intended.

In the Julian Calendar the months were all numbered, as well as named; thus, —

1. March.	5. July.	9. November.
2. April.	6. August.	10. December.
3. May.	7. September.	11. January.
4. June.	8. October.	12. February.

Sometimes, instead of writing out the name, the number only was expressed; and this generally followed the number of the day; thus, — the 10<sup>th</sup>, (11<sup>th</sup>), 1621, or the 10th: 11th mo: 1621; i.e., the 10th day of the 11th month in the Civil year 1621, which corresponds with the 10th of January of the Historical year 1622, old style, or 20th of January, 1622, new style.

The days of the week were frequently designated by signs, thus, —

⊕ Sunday.	⊖ Thursday.
⊖ Monday.	⊕ Friday.
⊕ Tuesday.	⊖ Saturday.
⊖ Wednesday.	

#### THE SPHYNX.

The oldest of all known sculpture, dating back to an antiquity which seems almost fabulous, but which accords well with the mystery of its shape and purpose, is the Great Sphynx, standing near the Pyramids, and beneath which some writers have supposed is the entrance to the tomb of Cheops. Unmentioned by Herodotus, it is yet known by the cartouche of its supposed founder, Thothmes IV., discovered upon it by M. Caviglia, to have been in existence at least 1561 years before the Christian era. Its meaning and purpose are alike unknown. The union of the woman's head and breast with the body of a lion, has suggested an astronomical enigma, while the Temple between the paws of the lion, laid open by Col. Vyse and M. Caviglia, proves that it was at all events used for some form of worship, if this was not the entire purpose of its creation. It is, says David Roberts in his Journal, the most impressive of all works of human art, exerting an influence over the mind more solemn and imposing than even the great Pyramid itself. The dimensions of this work almost exceed belief. The head is twenty-eight feet six inches high, and, estimating the human head at ten inches, is 10,000 times the size of nature. From the top of the head to the original ground, or rather rock, at the entrance of the Temple, is over one hundred feet, and the length is nearly one hundred and fifty, while the breadth of the shoulders reaches about thirty-five. It is cut from the solid rock, — a soft, greyish-white limestone, — forming the base upon which the Pyramids are erected, and is now covered to the depth of about sixty feet with the sand of the desert.

All traces of the excavation which twenty years since threatened to lay open the secrets of its breast are now effaced, and it presents to the stranger of to-day the same look of inscrutable and time-defying mystery which awoke the fierce and fanatical followers of the Prophet of Islamism, and the hosts who followed the banners of the cross to the recapture of the Holy Land. No traces of any kind, either in the sculptures or paintings of the Egyptians, give an indication of the method employed to produce this wonderful work, and the kindred colossi which are about to be described. Although in all these works the finer anatomical forms are neglected or overlooked, the general proportions of the body and its members, and the forms and individual characteristics of the features, are accurately and carefully given. These could only be done by artists thoroughly conversant with the proportions of the figure, and masters of a method of enlarging the scale, — since the difficulties of adjusting the proportions are very much increased by such enormous enlargement of the representation; and it is evident from the perfection of the result in works of peculiar complexity, as for instance the Temple and Statues of Aboo-Simbel hewn out of the solid rock, that they worked upon a system which assured with complete certainty the realization of their ideas.



# JANUARY,

TIME OF MOON'S PHASES, AT

## SOUTHING AND RISING OR SETTING OF THE PLANETS.

	Washington.	St. Louis & A. O.	San Francisco.	THE PLANETS.			
	D. H. M.	D. H. M.	D. H. M.	FIRST DAY.		SIXTEENTH DAY.	
D FIRST QUAR.	1 5 40 M.	1 4 47 M.	1 2 38 M.	H. M.	H. M.	H. M.	H. M.
○ FULL MOON.	8 10 15 M.	8 9 22 M.	8 7 14 M.	S'ths	1 45 E. Sets	6 29 E. S'ths	2 1 E. Sets
C LAST QUAR.	15 1 50 M.	15 0 57 M.	14 10 40 E.	MARS.	2 48 M. Rises	7 56 M. Rises	2 36 M. S'ths
○ NEW MOON.	22 7 5 E.	22 6 15 E.	22 4 7 E.	JUPITER.	5 32 E. S'ths	0 53 M. S'ths	11 41 E. Sets
D FIRST QUAR.	31 0 3 M.	30 11 10 E.	30 6 1 E.	SATURN.	8 21 E. S'ths	3 12 M. Rises	7 18 E. S'ths



## Montreal, British Prov's.

BRITISH COLUMBIA,  
N. W. STATES and  
Territorial, Wash-  
ington Territory,  
NEW ENGLAND, PENNSYLVANIA,  
N. York, Detroit, diana,  
Chicago, Iowa, Salt  
Lake, Southwestern Oregon, Northern

## Boston.

W. England  
York, Detroit  
Chicago, Iowa  
South'rn Oregon

N. Y. C.  
Penn. (D)

Fenn, O.  
diana, H.  
Salt Lake  
North Cul

ity. We

Illinoian, | Lou-  
City, South-  
ernia, San

**Washington, Charleston,  
Cincinnati, St. Louis, etc.**

Gulf States,  
Texas, Arizona  
San Diego.

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Date	Sun	Moon	SUN			MOON			SUN			MOON			SUN			MOON																	
			Sat.	Souls.	Rises.	Sat.	Sets.	Rises.	Sat.	Sets.	Rises.	Sat.	Sets.	Rises.	Sat.	Sets.	Rises.	Sat.	Sets.																
1	1	0	4	6	11	7	41	24	8	7	30	4	33	0	5	7	25	4	43	0	4	7	19	4	48	0	4	7	3	5	5	morn	1. CIRCUMCISION.		
2 Mo.	0	4	6	55	7	41	4	28	1	12	7	30	4	39	1	7	25	4	44	1	5	7	19	4	49	1	3	7	3	5	5	0	56	2. Pilgrims com. buildg. 1621.	
3 Tu.	0	5	7	44	7	41	4	29	2	22	7	30	4	39	2	15	7	25	4	45	2	11	7	20	4	50	2	8	7	3	5	6	1	57	3. Wedgewood died, 1735.
4 W.	0	5	8	37	7	41	4	30	3	35	7	30	4	40	3	25	7	25	4	46	3	21	7	20	4	51	3	16	7	45	7	3	1	4	Mass. Legislature meets.
5 Th.	0	6	9	37	7	41	4	31	4	48	7	30	4	41	4	36	7	25	4	47	4	30	7	20	4	52	4	25	7	45	8	4	7	5	Richmond destroyed, 1781.
6 Fri.	0	6	10	38	7	40	4	32	5	59	7	30	4	42	5	45	7	25	4	48	5	38	7	20	4	53	5	32	7	45	9	5	13	6. EPID. Ch. Summer b 1811.	
7 Sat.	0	6	11	41	7	40	4	33	rises	7	30	4	43	rises	7	25	4	48	rises	7	29	4	54	rises	7	45	9	rises	7.	Pres. Filmore born, 1800.					
8 S.	0	7	morn	7	40	4	34	24	30	7	30	4	44	4	57	7	25	4	49	4	57	7	19	4	55	5	3	7	45	10	5	21	8. Battle of N. Orleans, 1815.		
9 Mo.	0	7	0	44	7	40	4	35	6	2	7	29	4	45	6	12	7	25	4	46	6	16	7	19	4	56	6	21	7	45	11	6	35	9. Plough Monday.	
10 Tu.	0	8	1	42	7	39	4	36	7	27	7	29	4	47	7	34	7	24	4	51	7	37	7	19	4	57	7	40	7	45	12	7	49	10. Linnaeus died, 1778. (1624).	
11 W.	0	8	2	37	7	39	4	37	8	49	7	29	4	48	8	53	7	24	4	52	8	55	7	19	4	58	8	56	7	45	13	9	11	Cape Ann Charter signed.	
12 Th.	0	8	3	28	7	39	4	38	10	8	7	29	4	49	10	9	7	24	4	54	10	9	7	19	4	59	10	9	7	45	14	10	9	12	John Hancock born, 1737.
13 Fri.	0	9	4	17	7	38	4	40	11	25	7	28	4	51	11	23	7	23	4	54	11	22	7	19	5	19	0	11	21	7	45	14	11	16	13. Gov. John Davis born 1787.
14 Sat.	0	9	5	6	7	38	4	41	morn	7	28	4	51	morn	7	23	4	56	morn	7	18	5	1	morn	7	3	5	15	morn	14. Peace ratified by Cong 1783.					
15 S.	0	10	5	55	7	37	4	42	0	42	7	27	4	52	0	36	7	23	4	57	0	38	7	18	5	2	0	31	7	35	10	0	22	15. Charlestown burnt, 1778.	
16 Mo.	0	10	6	45	7	37	4	43	1	55	7	27	4	53	1	48	7	22	4	55	1	44	7	18	5	2	1	41	7	35	17	1	23	16. Gov. Clifford born, 1809.	
17 Tu.	0	10	7	37	7	33	4	45	3	10	7	26	4	55	3	0	7	22	4	59	2	54	7	17	5	2	4	50	7	35	18	2	33	17. Franklin born, 1706.	
18 W.	0	11	8	31	7	36	4	46	4	19	7	26	4	56	4	7	7	21	5	0	4	1	7	17	5	3	55	7	25	19	3	36	18. Daniel Webster born, 1782.		
19 Th.	0	11	9	25	7	35	4	47	5	21	7	25	4	57	5	8	7	21	5	1	7	17	6	4	45	5	7	25	20	4	35	19. Indep. ack by G. B. 1793.			
20 Fri.	0	11	10	19	7	34	4	49	6	13	7	25	4	58	6	0	7	20	5	12	7	54	5	16	7	5	48	7	25	21	5	25	20. Gov. Strong born, 1745.		
21 Sat.	0	12	11	11	7	33	4	50	6	56	7	24	4	59	6	44	7	20	5	4	6	28	7	15	5	8	6	33	7	15	22	6	14	21. Louis XVI. beheaded, 1793.	
22 S.	0	12	11	19	7	32	4	52	sets	7	23	5	1	sets	7	19	5	5	sets	7	15	5	9	sets	7	15	23	sets	22. Byron b. 1783. [sign'd] 1629.						
23 Mo.	0	12	even	7	32	4	53	5	42	7	23	5	2	5	50	7	18	5	6	54	7	14	5	10	5	59	7	15	24	6	11	23. Bradford's Plym't Patent.			
24 Tu.	0	12	1	28	7	31	4	54	6	47	7	22	5	3	6	53	7	18	5	7	56	7	13	5	12	6	59	7	6	25	7	7	21. Pilgrims' Rendezvous b'nt.		
25 W.	0	13	2	8	7	30	4	56	7	51	7	21	5	4	7	54	7	17	5	8	7	56	7	13	5	13	7	57	7	0	25	8	2	25. CONVERSION ST. PAUL [1621].	
26 Th.	0	13	2	48	7	29	4	57	8	53	7	20	5	6	8	54	7	16	10	8	54	7	12	14	8	55	6	59	26	8	56	26. Dr. Jenner died, 1823.			
27 Fri.	0	13	3	27	7	28	4	59	9	56	7	19	5	9	54	7	15	11	9	54	7	11	5	9	53	6	59	27	9	51	27. Treaty with France, 1832.				
28 Sat.	0	13	4	7	7	27	5	0	11	0	7	19	5	8	56	7	15	5	12	10	54	7	11	5	16	10	52	6	58	28	10	47	28. Gov. Boutwell born, 1818.		
29 S.	0	13	4	49	7	26	5	1	morn	7	18	5	10	morn	7	14	5	13	11	57	7	10	5	17	11	54	6	58	5	29	11	44	29. George III. died, 1820.		
30 Mo.	0	14	5	34	7	25	5	3	0	7	7	17	5	11	0	0	7	13	5	morn	7	9	5	18	morn	6	57	5	30	morn	30. Governor Banks born, 1816.				
31 Tu.	0	14	6	24	7	23	5	4	1	15	7	16	5	12	1	6	7	12	5	16	1	8	7	8	5	20	1	0	6	56	31	9	45	31. Cold Tuesday, 1815.	

## STATUES OF AMUNOTH III., THE PHARAOH OF THE EXODUS.

The feelings of awe and wonder which fill the mind at the contemplation of these two immense figures, are increased by the thought that they may have been seen by the Great Hebrew Lawgiver, while yet in the service of the Pharaoh to whose glory they were consecrated. The faces of both are entirely gone, with the exception of the ears of the more striking, and the more delicate parts are very much defaced. The thrones are covered with hieroglyphics, among which are cartouches of the Monarch, and a line of hieroglyphs is sculptured from each shoulder to the seat behind. The position is the usual one of repose. Smaller statues of the Pharaoh's wife and mother decorate the front of the sofa. The statues, placed on the pedestals, are forty-seven feet high, and are cut from a single block of stone. The most perfect of these in the engraving, the more distorted of the two, is the stele mentioned as the famous *Vestal Mother*, so often alluded to by ancient writers as hauling with her the beams of the rising sun. Much discussion has arisen as to the name "Mammon," but it is now agreed that it is a Greek corruption of that of Amun, the God of Egypt, of the eighteenth Egyptian Dynasty. That the statues of yester centuries can scarcely be described as it is stated to strongly by many ancient authorities who record them, and Pliny and Lucian mention the facts as notorious in their time. The legs, moreover, are covered with inscriptions in Latin and Greek, commemorating the names of ear-witnesses. One of these inscriptions records the visit of the Emperor Adrian, and his Empress, Sabina.

The greater part of this statue fell down seventy years before Christ, but was at length restored to its original position. A portion of the once solid mass was, however, replaced with less stones, and its original surface has been almost entirely destroyed.



COSTUMES OF THE PILGRIMS.

The accompanying illustration conveys a very good idea of the general costume of the Pilgrims, which, however, varied somewhat, both in form and materials, according to the station and means of the wearer. It originated in the reign of King James I., and was then confined to comparatively a small number of people,—the members of a persecuted religious sect; but, in the reign of his successor, Charles I., it became, with slight modifications, the universally adopted costume of a large and powerful political party, which, taking its stand on the right of the people as opposed to the arbitrary will of the sovereign, finally defeated him on the battle-field, and deprived him of both crown and life. For half a century it was the prevailing dress in England and her American colonies; and as the costume of John Binyon, Richard Baxter, John Hampden, Oliver Cromwell, and their cotemporaries, it will ever be regarded in history as a marked illustration of an age remarkable for the advances which it made in

every direction towards freedom of thought and its consequents,—civil and religious liberty.

William Bradford

WILLIAM BRADFORD, who succeeded Carver as governor of the colony, may well be said to have been one of its chief founders. He was a native of Ansterfield, a small village, within a walk of Scrooby, where, in his early days, was a Puritan congregation, presided over by a pastor of the name of Richard Clyfton, whose preaching exercised a great influence throughout the surrounding country, and deeply impressed the mind of Bradford,—peculiarly susceptible to serious impulses. He was sprung from the ranks of the yeomanry, a class of small landed proprietors, among whom were to be found the best of the national characteristics of the English people,—independence, industry, and manly self-respect. His parents died when he was quite young, leaving him a considerable inheritance for one in his station. Brought up to the labors, and receiving only the scanty education, of a farmer of that day, his natural thirst for knowledge and power of intellect enabled him to acquire most of the learning of the age. He mastered Dutch, French, Latin, Greek, and even Hebrew; which he studied with earnestness, "that he might see with his own eyes the ancient oracles of God in all their native beauty." He adopted, with the earnest enthusiasm which was the great characteristic of his mind, the theological views of the Separatist divines, and moulded his life strictly in practice to his religious belief. Beginning early in life, a leading man in the Puritan community of England, he left with the emigrants who fled to Holland, and finally became the venerated governor and historian of the infant State in America which he had so greatly assisted to found. He lived almost through the whole period of the English Commonwealth, and saw other flourishing colonies, the offspring of that at Plymouth, rising around him, and forming the germ of an immense nation; by all of whom he was regarded with the love and veneration due to a patriarch.

Gov. Bradford was twice married,—first to Dorothy May, who accompanied him to America, but was drowned by the upsetting of a boat in Cape Cod Harbor, during his absence on the first journey of exploration. He subsequently married Mrs. Alice Southworth, to whom he is said to have been attached before leaving England, and who came over to Plymouth, on his invitation, to become his wife.

In the engraving of Burying Hill may be noticed an obelisk, erected some years since to his memory, over the spot where his body lies interred. Many of his descendants lie buried around him,—among whom are his two sons; the gravestone of one being given below, as a specimen of the style which prevailed immediately after the first settlement of the colony.





# FEBRUARY

TIME OF MOON'S PHASES, AT

## SOUTHERN AND RISING OR SETTING OF THE PLANETS.

	Washington.	St. Louis & A. X.	San Francisco.	FIRST DAY.		SIXTEENTH DAY.	
				H. M.	H. M.	H. M.	H. M.
○ FULL MOON,	6 9 27 E.	6 8 34 E.	6 6 25 E.	VENUS,	Sths 2 13 E.	Sets 7 44 E.	Sths 2 21 E.
○ LAST QUAR.	13 1 43 E.	13 0 50 E.	13 10 41 M.	MARS,	Rises 2 21 M.	Sths 7 10 M.	Rises 2 7 M.
● NEW MOON,	21 2 39 E.	21 1 37 E.	21 11 28 M.	JUPITER,	Sths 10 30 E.	Sets 5 56 M.	Sths 9 25 E.
○ FIRST QUAR.	29 2 47 E.	29 1 54 E.	29 11 45 M.	SATURN,	Rises 6 6 E.	Sths 1 3 M.	Rises 4 5 E.



## Montre

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Boston.

N.Y.

Bington Territory, South Oregon, Northern California, San Francisco.												FEBRUARY																						
M.	Day	Sun.	Moon	SUN.		MOON		SUN.		MOON		SUN.																						
				South.	South.	Rises.	Sets.	Sets.	Rises.	Sets.	Sets.	Rises.	Sets.																					
1 W.	0	14	7	18	7	22	6	2	27	15	14	2	15	7	11	17	2	9	7	7	21	2	3	6	56	52	1	46	1. Cambige bridges free, 1858.					
2 Th.	0	14	8	17	7	21	5	3	27	7	11	15	3	23	7	10	18	3	16	7	6	55	22	3	10	6	55	33	2	50	2. PURIFICATION. (absl. 1813.)			
3 Fri.	0	14	9	19	7	20	5	4	2	7	13	5	16	4	27	7	9	25	20	4	21	7	5	23	4	14	6	54	34	3	53	3. Wool-combers' day. Inquis.		
4 Sat.	0	14	10	22	7	19	5	10	5	23	7	11	5	17	5	26	7	8	5	21	5	19	7	4	5	24	5	13	6	53	35	4	53	4. Rev. War ceas. 1783.
5 S.	0	14	11	22	7	17	5	12	6	26	7	10	5	19	6	14	7	7	25	22	6	9	7	3	25	6	3	6	53	36	5	46	5. U. S. Bank failed, 1841.	
6 Mo.	0	14	morn	7	16	5	13	rises.	7	9	20	rises	7	6	25	23	rises	7	2	25	23	rises	6	52	37	31	ries.	6. Gov. Fustis d. 1825. Alli-						
7 Tu.	0	14	0	20	7	15	5	15	15	6	21	7	8	5	21	6	25	7	5	25	25	6	27	7	15	28	6	29	6	51	38	6	35	7. France with France, 1578.
8 W.	0	14	1	15	7	18	5	17	6	24	7	7	5	23	7	16	4	5	26	24	7	6	24	7	29	7	47	6	50	39	7	48	8. Rose Standish died, 1621.	
9 Th.	0	14	2	7	7	12	5	18	9	5	7	6	24	9	3	7	35	27	9	2	6	59	30	1	6	1	50	40	8	59	9. Pres Harrison b. 1773. (1621.)			
10 Fri.	0	14	2	58	7	19	5	19	10	23	7	4	5	25	10	20	7	15	28	10	18	6	58	5	31	10	15	6	49	11	10	8. 10. Savages first seen at Plym.		
11 Sat.	0	14	3	48	7	9	5	21	11	43	7	3	5	27	11	35	7	0	29	11	31	6	57	5	32	11	27	6	48	5	42	11	11	15. King Ferdinand died, 1516.
12 S.	0	14	4	40	7	8	5	22	morn	7	2	25	28	morn	6	58	5	31	morn	6	56	5	23	morn	6	47	5	42	morn	12. Gov. Briggs born, 1796.				
13 Mo.	0	14	5	32	7	6	24	1	0	7	0	5	29	0	49	6	58	32	0	44	6	55	35	0	39	6	46	5	43	0	23	13. Cold Friday, 1817.		
14 Tu.	0	14	6	27	7	5	25	2	12	6	59	31	1	59	6	56	5	33	1	53	6	54	36	1	47	6	45	44	1	24	14. Gov. Washburn b. 1800.			
15 W.	0	14	7	21	7	3	29	3	16	6	58	52	2	3	2	6	55	34	2	25	5	52	35	2	29	4	41	45	2	21	15. Roger Williams arr. 1631.			
16 Th.	0	14	8	15	7	25	25	4	12	6	56	53	3	35	7	6	54	35	25	3	50	6	51	38	3	43	6	43	46	3	23	16. Charles II. died, 1665.		
17 Fri.	0	14	9	7	7	0	29	4	57	6	55	51	3	4	43	6	53	37	4	37	6	50	5	39	4	30	6	42	47	4	11	17. Peace With G. B. rat. 1815.		
18 Sat.	0	14	9	57	6	58	51	3	52	6	58	53	5	21	6	51	38	15	4	56	4	49	5	40	10	6	41	15	48	4	53	18. Wm. Wirt died, 1834.		
19 S.	0	14	10	43	6	57	52	6	0	6	52	37	5	50	6	50	39	15	46	6	47	41	5	41	6	40	5	49	5	27	19. Gov. Morton born, 1784.			
20 Mo.	0	14	11	26	6	55	34	sets	6	50	58	sets	6	48	5	40	sets	6	46	5	42	sets	6	39	5	49	sets	20. Constitution takes Cuyam-						
21 Tu.	0	14	even	6	53	35	5	42	6	49	5	39	5	46	6	47	41	5	47	6	45	44	5	49	6	38	50	5	55	and Levant, 1815.				
22 W.	0	14	0	47	6	52	36	6	45	6	47	5	41	6	46	4	45	43	4	47	6	43	45	45	6	47	6	37	51	6	49	22. ASW Wed. Washington b.		
23 Th.	0	14	1	26	3	50	38	7	48	6	46	45	2	7	47	6	44	5	47	6	42	45	47	6	46	23	13. J. Q. Adams d. 1843. (1792.)							
24 Fri.	0	14	2	6	46	49	39	8	52	6	45	42	8	48	6	43	45	48	8	46	6	41	45	47	8	38	23,24,25. Rev in Paris, 1848.							
25 Sat.	0	14	2	47	6	47	45	9	58	6	43	45	44	9	52	6	41	45	46	9	49	6	39	50	48	9	46	6	34	51	9	36	25. Battle of Warsaw, 1831.	
26 S.	0	13	31	6	45	45	22	11	5	6	42	46	10	56	6	40	5	47	10	51	6	38	5	49	10	48	6	32	54	10	31	26. Napoleon left Elba, 1815.		
27 Mo.	0	13	4	18	6	43	45	43	morn	6	40	5	47	41	6	38	5	48	41	11	57	6	37	50	11	51	6	31	55	11	35	27. Standish chosen Capt. 1821.		
28 Tu.	0	13	5	9	6	42	45	0	13	6	38	5	48	0	2	6	37	5	50	morn	6	37	5	51	morn	6	30	5	56	morn	28. Accident on Princeton, 1844.			
29 W.	0	13	6	5	6	40	46	1	22	6	37	5	49	1	9	6	35	51	1	3	6	31	52	0	56	6	29	57	0	37	29. Galileo b. 1564. Emb. week.			



FEBRUARY

1. Camb'ge bridge free, 1558.
2. PURIFICATION, [abol.] 1813.
3. Wool-combers' day. Inquis.
4. Rev. War ceas. 1783.
5. U. S. Bank failed, 1841.
6. Gov. Eustis d. 1825. Alliance with France, 1778.
7. Rose Standish died, 1621.
8. Pres Harrison b. 1773. [1621]
9. Savage first seen at Plym.
10. King Ferdinand died, 1516.
11. Gov. Briggs born, 1796.
12. Cold Friday, 1817.
13. Gov. Washburn b. 1800.
14. Roger Williams arr. 1631.
15. Charles II. died, 1685.
16. Peace With G. Rat 1815.
17. Wm. Wirt died, 1834.
18. Gov. Morton born, 1784.
19. Constitution takes Cyane and Levant, 1815.
20. AST WED. Washington b.
21. J. Q. Adams d. 1841. [1572]
22. 23,24,25. Rev in Paris, 1848.
23. Battle of Warsaw, 1831.
24. Napoleon left Elba, 1815.
25. Standish chosen Capt. 1621.
26. Accident on Princeton, 1844.
27. Galileo b. 1564 Emb. week.

## STATUES OF RAMSES II.

Before the rock-hewn temple of Abu-Simbel, and also in a niche of the great temple at Luxor, sit statues of the great Ramesses, — in first case attached to the wall of the temple, — in the other, a few feet removed. Only less in size than the Sphinx, they are all as respects Egyptian art, of extraordinary beauty; and, except in some minor details, are almost exact repetitions. They represent the monarch seated upon his throne, reposing after his conquests, — the arms pressed close to his sides, and the hands resting upon the knees. On the front of the throne are smaller statues, about eighteen feet high, of his Queen and children. The sides of the throne are covered with sculptures and hieroglyphs, indicating his exploits, the extent of his dominion, and the uniform in his person of the supreme officers of priest and ruler. His cartouche is sculptured upon his breast and arms. The statue represented in the engraving wears the cap called the corn-measure surmounted by the nitrur; it is one of the four in front of the temple of Abu-Simbel; which are considered the most beautiful colossi now remaining in Egypt. These figures are about fifty feet high in their sitting posture, without the cap, which measures fourteen feet. From the shoulder to the elbow is fifteen feet and six inches; the face is seven feet; and the ears three feet and six inches; the breadth across the shoulders, twenty-five feet and four inches. Those before the temple at Luxor were about the same size, and were each cut from a single block...

William Brewster

Upon the departure of the Pilgrims from Holland, it was agreed that their pastor, Robinson, on account of his age and infirmities, should remain with those who were to come over when the settlement was effected; and the choice for a minister fell upon William Brewster, who, although not regularly ordained, was well qualified by his natural powers, by education, and by having long been a leading elder in the church, to fill that office.

He was a man of good family, had been educated at Cambridge (probably at Emmanuel College, founded in 1583, by Sir Walter Mildmay); and afterwards went up to London to seek employment at court. Here he became acquainted with William Davison, Secretary of State, and entering his service was employed by him in various matters of trust. Davison being sent by Elizabeth to the United Provinces, to conclude a negotiation for a loan which he had consented to make on the security of three important seaports, Brewster accompanied him; and was entrusted by him with the safe keeping of the keys of The Hague. At their return, Brewster was presented by the authorities with a golden chain, which he wore on their arrival in England as they rode together through the country, en route to the court. Davison and Brewster were, however, destined to feel to the full how little faith can be placed in the favor of princes. Of inflexible integrity, high principles, lofty sense of honor, and unsuspecting temper, they were both ill-adapted to sustain for any considerable time, a position in a court practised in intrigue, and given up to dissimulation of every kind and degree.

Elizabeth having determined upon the death of her lovely but unfortunate rival, Mary, Queen of Scots, sent privately for Davison, and ordered him to draw the death-warrant, which she immediately signed, and sent by him to the chancellor to receive the Great Seal. Upon the death of Mary, the Queen, with her usual inconstancy, affected great indignation at what she was pleased to term the precipitancy of her unfortunate secretary, whom she threw into the tower, and stripped of the greater portion of his estates. Deeply abashed by this striking example of hardened duplicity, Brewster still continued by his unfortunate master, rendering him every service in his power.

Having at length satisfied every demand of duty to his master, and gratitude to his patron, he seems to have decided to retire from a life, which required for success the sacrifice of every principle of honor and virtue, to one more congenial to an honorable and ingenuous nature. He withdrew to his estate in the country, where he lived for many years, "doing the best good he could, and willing according to the light he saw, until the Lord revealed further to him." The tyranny of the church, constantly

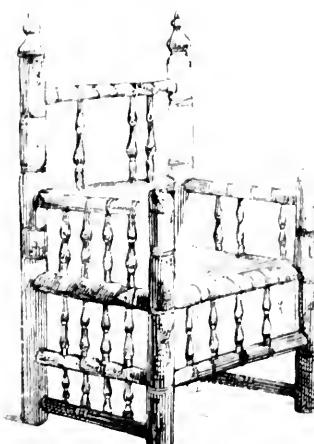
exercised against both preachers and people whose consciences led them to depart from its usages, led at length to the final separation of great numbers; and of these, Brewster was one of the leading spirits in his immediate neighborhood, encouraging others both by precept and example, to help forward the work of promoting the views which they entertained in common; and assisting them in their necessities under the privations of a relentless persecution, often, perhaps, beyond his means.

Upon the determination of James to *harry* the Puritans and Separatists out of the land, in which he was worthily seconded by the prelates and their agents, acting by means of the Court of High Commission, Brewster with many others resolved to fly to Holland. In the arrangement necessary for the accomplishment of this object he appears to have had mainly the charge and direction of their business. Although they failed at the first attempt to leave England, at Boston, through the treachery of the captain of the vessel hired to transport them, and were seized, searched, rifled of their money and goods, thrown into prison, and the ringleaders finally bound over to the assizes, they managed, afterwards, but after many vicissitudes, to reach that haven of the oppressed.

On their arrival in Holland, Brewster, originally a man of property, was so reduced that he was compelled to labor for his subsistence. His occupation was to teach English, which he did with such success, that numbers of the students at Leyden resorted to him to acquire that language after their regular studies at the university were concluded. In addition to this he set up a private printing press, at which many Puritan books and pamphlets were printed in English, and sent over to England for private distribution. This rendered him so obnoxious to James and his bishops that the English ambassador at the Court of Holland was directed to have him sought out and apprehended, the Dutch assenting, being desirous from motives of policy to preserve the friendship of the English king. He transported himself and family for a time to London where he remained secretly hidden, until the danger was over.

When the Pilgrims had established themselves at Leyden, Robinson was formally ordained as their pastor, and Brewster was at the same time appointed elder. Upon the departure for America, as related at the commencement of this article, he was chosen to be the pastor of the emigrants until Robinson should be able to join them. This long-hoped-for event never occurred, Robinson dying in Holland; and up to a few years of his death, at the age of eighty, Brewster regularly conducted the services of the church when there was no other minister, preaching twice every Sunday; and this "both profitably and powerfully."

"He died in his bed in peace, in the midst of his friends, who mourned and wept over him, and ministered what help they could unto him." A memorial of Elder Brewster in the shape of his chair, a cut of which is given below, is still preserved in Pilgrim Hall; and at the head of this article is a fac-simile of his signature.





# MARCH.

TIME OF MOON'S PHASES, AT

## SOUTHING AND RISING OR SETTING OF THE PLANETS.

	Washington,		St. Louis & N. O.		San Francisco.		FIRST DAY.		SIXTEENTH DAY.		
	D.	H. M.	D.	H. M.	D.	H. M.	H. M.	H. M.	H. M.	H. M.	
○ FULL MOON,	7	7 36 M.	7	6 43 M.	7	4 34 M.	VENUS,	Sths 2 27 E.	Sets 8 52 E.	Sths 2 34 E.	Sets 9 25 E.
● LAST QUAR.	14	4 0 M.	14	3 7 M.	14	0 58 M.	MARS,	Rises 1 54 M.	Sths 6 28 M.	Rises 1 31 M.	Sths 6 5 M.
● NEW MOON,	22	8 47 M.	22	7 54 M.	22	5 45 M.	JUPITER,	Sths 8 26 E.	Sets 4 1 M.	Sths 7 27 E.	Sets 3 3 M.
○ FIRST QUAR.	30	1 45 M.	30	0 52 M.	29 10 43 E.		SATURN,	Sths 10 55 E.	Sets 6 0 M.	Sths 9 52 E.	Sets 4 57 M.



**Montreal.** **Boston.** **N. Y.**  
British Prov'n's, New England, Penn.  
N. W. States and N. York, Detroit, Indiana  
Territor's, Wash- Chicago, Iowa, Salt Lake  
ington Territory, South'rn'nterio, North

**Boston.** New England, New York, Detroit, Chicago, Iowa, New Haven, N. Y., Penn., diamet., Salt I., North.

**City.** **Washington** **Charleston**  
 Ohio, Indiana, Illinois, Kentucky, California  
 Cincinnati, St. Louis, Kansas, Southern Utah, San Francisco  
 Gulf States, Texas, Arizona, San Diego.

# MENORABILIA

## THE JUPITER OF ELIS.

The perfection of Greek sculpture was the result of several centuries of constant development, commencing with rude, stiff, motionless figures, without details of form, or any attempt at action or expression, — and culminating in the wonderful works of the school of Phidias, conceived with the last refinement of subtle grace of movement and expression, and embodied in the most exquisitely rendered forms. Much the larger number of these works were executed in marble, a material susceptible of the most delicate finish of surface, while its peculiar translucency renders it admirably adapted to the representation of such features as are made the vehicles of expression in sculptural art. Great numbers of statues, parts of statues, busts, compositions in relief, &c., both in marble and bronze, still remain to attest the excellence of the Greek artists, — and among these are works from the hand of Phidias himself, or his immediate pupils.

But of the two statues by this great artist, which exercised the most potent influence on the minds of his contemporaries, nothing remains but descriptions. Executed in a combination of gold and ivory, the materials of which they were composed being, in comparatively a short time after their completion, objects of cupidity, and they were probably destroyed on this account. Phidias is said to have desired, on both occasions, to embody his conceptions in marble, or some material of less intrinsic value, — not as a question of taste, but that they might remain the longer unimpaired.

Of these two works, the larger, and later in point of time, was the Jupiter at Elis, — the scene of the Olympian games. It is described minutely by Pausanias, and from this description, with some additional data by other Greek writers, has been restored by M. Quartremere de Quincy, a distinguished French architect and writer. The statue was sixty feet high seated, — the head nearly reaching the top of the temple in which it was placed. The flesh was of ivory, — the mantle, wreath, sceptre, sandals, &c., of gold, — and the throne of gold, ivory, and ebony.

The throne, the sandals of the Deity, and other parts, were covered with the most exquisite sculptures in miniature, and the whole work was executed with a care, and to a perfection, which made it an object of wonder even to the artists of Greece.

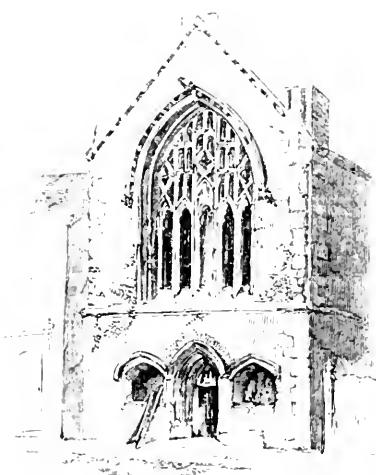
The illustration on the opposite page is taken from the work of M. de Quincy.

APRIL 19, 1775.—On this day, a little band of Lexington farmers, composing a company of undisciplined militia, under the command of Captain Parker, formed upon the common in that town, and answered to their names on the roll-call — nine of them for the last time. The first hour of the American Revolution was at hand. Every moment brought nearer to them the British forces, strong in number, and ruthless in their hatred of the patriots. The odds were overwhelming — on one side an army of disciplined regulars, on the other a handful of countrymen who had hastily snatched their firelocks and left their rural labors, to work a memorable day in the cause of freedom. Of course they were overpowered; before the glistening battalions of General Gage they were helpless. The blood of their brave men flowed freely, but in vain. And yet not all in vain, for it was the seed of the Revolution. Indeed, that day's sun had not set before the blood of the martyrs was avenged, and Pitcairn and his eight hundred men, reduced to seven hundred and thirty, lay panting, like exhausted bloodhounds, beneath the guns of Boston. It was a most important and decisive day in our history. Consider the greatness of this movement, and then look at that little seventeen-foot high obelisk on Lexington Common, and say if *that* is a fitting monument to an event so momentous in the annals of America!

## THE MEMORY OF THE DEAD.

"What is the good of it?" say those who would beat down all shrines, and statues, and temples, lest in doing homage to the memory of the illustrious dead, we verge upon Pagan adoration. Many ages ago the eloquent Pericles, in an oration in honor of the hero-dead who fell

fighting for the liberties of Greece, declared in true and burning words the good of doing honor to the memory of the noble dead. It was not that they — immortal in their deeds — needed temple or column to perpetuate their fame, or reward their virtues, but because the living, by thus spurring emulation of the good and heroic dead, inspired and ennobled themselves. Their homage was proof that they were not ungrateful, nor insensible to the deeds that constitute glory and renown. No wreath is given, and no monument reared by a nation to the memory of its illustrious dead, but it blossoms with good for the living through all future time. Virtue is encouraged, patriotism kindled, and all that is noble in our nature inspired to action, by this homage to the greatness and goodness of our race.

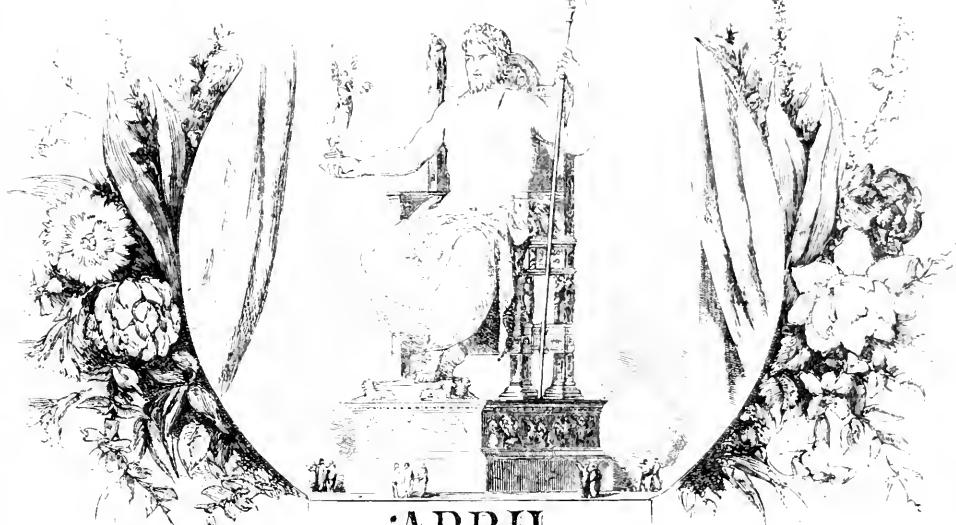


TOWN HALL, BOSTON, ENGLAND.

The old town of Boston, Lincolnshire, has many claims to the remembrance of the sons of the Pilgrims. Here they came first to take passage to Holland, and met with their first misadventure; — here, notwithstanding the enmity of king and bishops, they found many sympathizing friends, even the magistrates feeling and acting in their behalf; — in the old Town Hall, Brewster, Bradford, and their companions, were examined before the magistrates, and bound over to the assizes, probably to permit them to escape; — and here they left at their departure the seeds of the colony which was to follow them in a few years, — and found at the head of Massachusetts Bay the new Boston, which has now so far outstripped in population, and fame, its ancient mother town.

At the time of the flight of the Pilgrims to Holland, Boston was the most important seaport on the eastern coast of England, and the most convenient point of embarkation for that country. It had been for four centuries a place of great wealth and commerce, paying in 1204 a tax upon land and goods second only to London, — and, in 1359, furnishing seventeen ships and 361 men to Edward III, for the invasion of Brittany. In the reign of Elizabeth, it was fast declining in wealth and importance, and it is now a mere market town for the rich agricultural district in which it is situated.

The Town Hall is a quaint building, in the last style of Gothic architecture, now rapidly going to decay. Numbers of old buildings, some of wood, others of brick, with stone dressings, quaint high-pointed gables, and steep roofs, show the influence of Dutch trade and taste, and suggest the appearance of the town when our forefathers, with their wives and families, were marched through the streets, the victims of the Court of High Commission, — "exposed as a spectacle to the multitude who came from all sides to behold them."



# APRIL.

TIME OF MOON'S PHASES, AT

SOUTHERN AND RISING OR SETTING OF  
THE PLANETS.

Washington. St. Louis & N. O. San Francisco.

D. H. M. D. H. M. D. H. M.

○ FULL MOON,	5	4	52 E.	5	3	59 E.	5	1	50 E.
C LAST QUAR.,	12	8	26 E.	12	7	33 E.	12	5	24 E.
● NEW MOON,	21	1	37 M.	21	0	44 M.	20	10	35 E.
D FIRST QUAR.,	28	9	28 M.	28	8	35 M.	28	6	26 M.

FIRST DAY.

H. M.

SOUTHERN.

H. M.

SIXTEENTH DAY.

H. M.

H. M.

VENUS,	Sths	2 44 E.	Sets	10 0 E.	Sths	2 55 E.	Sets	10 27 E.
MARS,	Rises	1 8 M.	Sths	5 40 M.	Rises	0 44 M.	Sths	5 14 M.
JUPITER,	Sths	6 27 E.	Sets	2 2 M.	Sths	5 34 E.	Sets	1 9 M.
SATURN,	Sths	8 47 E.	Sets	3 55 M.	Sths	7 47 E.	Sets	2 55 M.

Montreal. Boston. N. Y. City.

British Provins', New England, Penn., Ohio, Indiana, Illinois, Salt Lake City, North California.

Washington. Charleston.

Cincinnati, St. Louis, Kansas, Southern Utah, San Francisco.

Gulf States,

Texas, Arizona, San Diego.



D	Day	Sun.	Moon.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.									
W.	Week.	Sun.	Souths.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.									
1	S	8	42	5 40 6 26	3 23	5 42 6 26	3 14	5 42 6 25	3 10	5 44 6 24	3 6 5 48 6 20	2 53								
2	Mo.	0	9	35	5 38 6 30	3 50	5 40 6 27	3 44	5 42 6 26	3 41	5 43 6 25	3 39	5 46 6 21	3 30						
3	Tu.	0	3	10	27	5 36 6 31	4 14	5 39 6 28	4 11	5 40 6 27	4 10	5 41 6 26	4 8 5 45 6 22	4 4						
4	W.	0	3	11	18	5 34 6 32	rises	5 37	6 29	rises	5 38 6 28	rises	5 40 6 27	rises	5 44 6 22	rises				
5	Th.	0	3	19	5 32 6 34	6 46	5 35 6 30	6 41	5 37 6 29	6 30	5 38 6 27	6 36	5 42 6 22	6 29						
6	Fri.	0	2	0	11	5 31 6 35	8	9	5 31 6 32	8	1	5 35 6 30	7 57	5 37 6 28	7 52	5 41 6 24	7 42			
7	Sat.	0	2	1	5 29 6 36	9	29	5 32 6 33	9 18	5 33 6 31	9 13	5 35 6 29	9	8 5 40 6 24	8 52					
8	S	0	2	2	5 27 6 37	37	10	45	5 30 6 34	34	10	32	5 32 6 32	10 26	5 34 6 30	10	1			
9	Mo.	0	1	3	0	5 25 6 36	39	11	5 26 6 35	35	11	38	5 30 6 33	11 31	5 32 6 31	11 25	5 38 6 26	11 4		
10	Tu.	0	1	3	57	5 23 6 40	morn	5	27	6 36	morn	5	29	6 34	morn	5 36	6 27	morn		
11	W.	0	1	4	53	5 21 6 41	0	48	5 25 6 37	0	34	5 27	6 35	0	27	5 29	6 33	0	1	10
12	Th.	0	1	5	46	5 20 6 43	1	32	5 24 6 38	1	19	5 26 6 36	1	13	5 28 6 34	1	7 5	6 28	6 28	
13	Fri.	0	0	6	35	5 18 6 44	2	6	5 22 6 39	1	55	5 24 6 37	1	50	5 26 6 35	1	45	5 33 6 29	1 29 12	
14	Sat.	0	0	7	21	5 16 6 45	2	32	5 20 6 41	2	23	5 23 6 38	2	19	5 25 6 36	2	15	5 31 6 29	2 2 13	
15	S	0	0	8	4	5 14 6 46	2	54	5 19 6 42	2	48	5 21 6 39	2	45	5 23 6 37	2	42	5 30 6 30	2 33 13	
16	Mo.	0	0	8	45	5 12 6 48	3	14	5 17 6 43	3	10	5 19 6 41	3	8	5 22 6 38	3	6	5 29 6 31	3 15	
17	Tu.	0	11	59	9	24	5 11 6 49	3	31	5 16 6 44	3	29	5 18 6 42	3	28	5 20 6 39	3	28	5 28 6 32	3 25 16
18	W.	0	11	59	10	4	5 9 6 50	3	47	5 14 6 45	3	48	5 16 6 43	3	49	5 27 6 32	3	50	17	Francis Cooke died, 1663.
19	Th.	0	11	59	10	45	5	7 6 52	4	5 5 13 6 46	4	8	5 15 6 44	4	10	5 18 6 41	4	11	5 25 6 33	4 16 17
20	Fri.	0	11	59	11	27	5	5 6 53	sets	5 11 6 47	sets	5	13 6 45	sets	5	16 6 42	sets	5 24 6 34	sets	18. Arabela sailed from Eng'd.
21	Sat.	0	11	59	even	5	4 6 54	7	53	5 10 6 48	7	44	5 12 6 46	7	40	5 15 6 43	7	35	5 23 6 35	7 21 19. Battle of Lexington, 1775.
22	S	0	11	58	1	2	5 26 55	9	5 5 8 6 49	8	53	5 11 6 47	8	47	5 14 6 44	8	42	5 22 6 35	8 25 19. Gov. Davis d. 1854. [1606.]	
23	Mo.	0	11	58	1	5 55	0	6 7 56 10	10	5 6 51	9 5 7 5	9 6 5 9 48	5 1 5 12 6 45	9 4 5 5 11 6 45	9 4 5 5 11 6 45	9 26 6 36	9 25 20. 1st Col. Charter of Virginia.			
24	Tu.	0	11	58	2	51	4 59 6 58	11	12	5 6 52	10	58 5	8 6 49	10	51	5 11 6 46	10	45	5 20 6 37	10 24 22. Dr. Rush died, 1813.
25	W.	0	11	58	3	49	4 57 6 59	morn	5	3 6 53	11	52 5	6 6 50	11	46	5 10 6 46	10	47	5 31 6 37	11 20 23. S. A. Douglass born, 1813.
26	Th.	0	11	58	4	46	4 55 7	0	5 5 5 26	54	55	5 51	5 51	5 50	5 8 6 45	morn	5 1 8 6 38	morn	26. Elder Brewster died, 1641.	
27	Fri.	0	11	57	5	42	4 54 7	2	0 4 9 5	1 6 55	0 37	5	4 6 52	0 31 5	7 6 49	0 26	5 17 6 39	0	9 27. Kosuth born, 1802.	
28	Sat.	0	11	57	6	36	4 52 7	3	1 23	4 58 6 56	1 14 5	2 6 53	1 10 5	6 6 50	1	5 5 16 6 40	0 51 28. Pres. Monroe born, 1758.			
29	S	0	11	57	7	27	4 51 7	4	1 52	4 58 6 57	1 45 5	16 54	1 42 5	4 6 51	1 39	5 15 6 40	1 30 29. Phineas Pratt d. 1680. [1622.]			
30	Mo.	0	11	57	8	17	4 49 7	6	2 16	4 56 6 58	2 12 5	0 6 55	2 10 5	8 6 52	2	8 5 14 6 41	2 3 30. Pierce's 2d Plym. Pat. sig'd.			

## THE STATUE OF MINERVA PARTHENON.

The Athenians had early adopted Minerva as their patroness, and it is related that there was preserved in the Acropolis a statue of the goddess, in olive wood, which fell from Olympus. After the battle of Marathon, when Athens was rebuilt, another statue, cast in bronze, was placed overlooking the citadel, and making a landmark for her returning mariners. The Parthenon, the great temple, was dedicated to her honor; and, finally, in the cella, or hall of the temple, was placed the great statue of gold and ivory, one of the master-pieces of Phidias.

This statue, although about forty feet high, was finished to the last degree of minuteness in its details, and was the occasion of the statue of Jupiter, of the same materials, made for the Temple of Eliis, and which is described on the previous page.

["Behold the little Mayflower, rounding now the southern Cape of England, filled with husbands, and wives, and children, families of righteous men, under 'covenant with God and each other,' to 'lay some good foundation for religion,' engaged both to make and to keep their own laws, expecting to supply their own wants, and bear their own burdens, assisted by none but the God in whom they trusted. Here are the hands of industry! the germs of liberty! the dear pledges of order! and the sacred beginnings of a home!" — *Dr. Bushnell's Address, at New York, Dec. 22, 1849.*]



## THE SHIP MAY-FLOWER.

The necessary preparations having been made, and the arrangements settled for the voyage to America, two small vessels were purchased, one in Holland, called the "Speedwell," of about sixty tons burthen,— the other, called the "May-Flower," of one hundred and sixty tons, which was to await their arrival in England, where they expected to be joined by some others of a like mind with themselves.

The "Speedwell" was finally abandoned, and the band of Pilgrims embarked in the "May-Flower," at Plymouth, England, on the 16th of September, upon the voyage which has rendered their vessel and themselves alike immortal.

In our day it would be considered somewhat hazardous even with the greater knowledge which we possess of the sea, and the securities which science has enabled us to gather around us, to attempt this ocean voyage in a little vessel of the size of the "May-Flower," — and the hazard would be regarded as much enhanced by the clumsiness and apparent unsavoriness of the craft. But, small as she was, clumsily and tub-like as she was modelled, the "May-Flower," breasted well the billows of the Atlantic, rode out the fierce northeasters of the equinox, and struggling gallantly onward with her precious freight, finally brought the little band in safety to the destination prepared for them by Providence.

Nor was this her only service in the cause of New England colonization.

In 1629, she was still engaged in crossing between England and America, carrying a company of Mr. Robinson's congregation, who had remained in Holland up to that time; — and again, in 1630, July 1st, O. S., she arrived in Charlestown harbor, bearing a portion of Winthron's company, who laid the foundations of the Massachusetts colony. What finally became of her is unknown.



## THE TRAILING ARBUTUS.

This beautiful and modest flower, with its blossoms of delicate rose-color, and exquisite perfume, is with us the first to tell the death of winter and the approach of a more genial season. It is not uncommon throughout New England, but is so retiring in its nature, that it needs a lover's search to find it amid the dead leaves of the woods, clinging, as it were, to the bosom of Mother Earth. The following exquisite poem, which first appeared in the weekly New York Tribune, seems inspired with the delicacy of its subject, and is a gem worthy of any setting.

### TRAILING ARBUTUS.

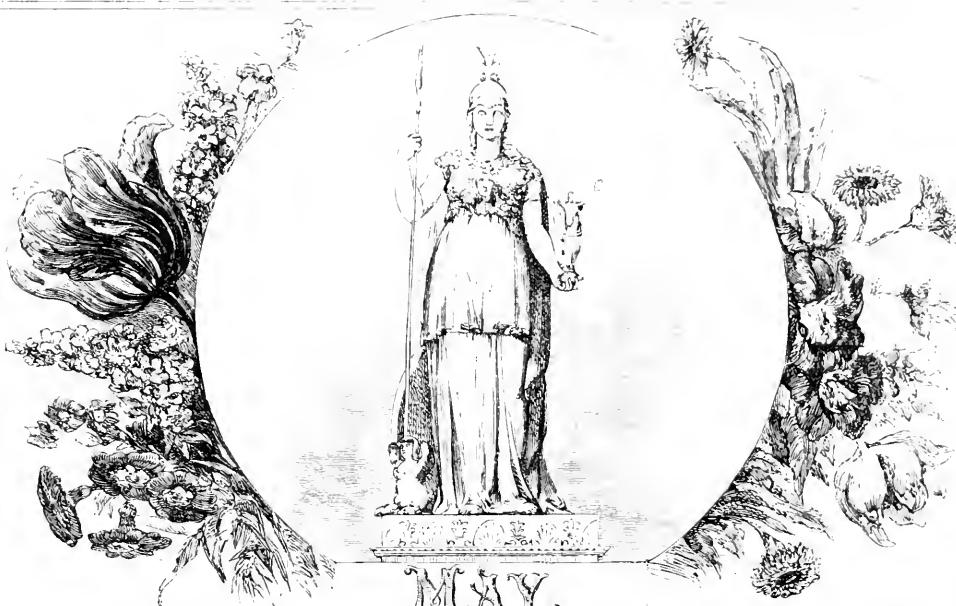
Darlings of the forest!  
Blossoming alone  
When Earth's grief is sorest  
For her jewels gone—  
Ere the last snow drift melts, your tender buds have blown,  
Tinged with color faintly,  
Like the morning sky,  
Or more pale and sautly,  
Wrapped in leaves ye lie,  
Even as children sleep in faith's simplicity.

There the wild wood-robin  
Hymns your solitude,  
And the rain comes sobbing  
Through the budding wood,  
While the low south wind sighs, but dare not be more rude.

Were your pure lips fashioned  
Out of air and dew;  
Starlight unimpassioned;  
Dawn's most tender hue;  
And scented by the woods that gathered sweets for you?

Fairest and most lonely;  
From the world apart,  
Made for beauty only,  
Veiled from Nature's heart,  
With such unconscious grace as makes the dream of Art!

Were not mortal sorrow  
An immortal shade,  
Then would I to-morrow  
Such a flower be made,  
And live in the dear woods where my lost childhood played.



# MAX.

TIME OF MOON'S PHASES, AT

## SOUTHING AND RISING OR SETTING OF THE PLANETS.

	Washington.	St. Louis & N. O.	San Francisco.		FIRST DAY.		SIXTEENTH DAY.
	D. H. M.	D. H. M.	D. H. M.		U. M.	H. M.	H. M.
○ FULL MOON,	5 1 54 M.	5 1 1 M.	4 10 52 E.	VENUS,	Sths 3	6 E.	Sets 10 48 E.
○ LAST QUAR.,	12 2 8 E.	12 1 15 E.	12 11 6 M.	MARS,	Rises 0 10 M.	Sths 4 44 M.	Rises 11 34 E.
● NEW MOON,	20 1 38 E.	20 0 45 E.	20 10 36 M.	JUPITER,	Sths 4 43 E.	Sets 0 16 M.	Sths 3 54 E.
○ FIRST QUAR.,	27 2 56 E.	27 2 3 E.	27 11 54 M.	SATURN,	Sths 6 48 E.	Sets 1 53 M.	Sths 5 51 E.
	<b>Montreal.</b> British Provins, N. W. States and New York.	<b>Boston.</b> New England, N. W. States and New York.	<b>N. Y. City.</b> Penn, Ohio, In- diana, Illinois.	<b>Washington.</b> Cincinnati,	<b>Charleston.</b> St. Louis, Kansas, Louisiana, Texas, Arkansas.	<b>MEMORABILIA</b>	



# MEMORABILIA

M A Y

## COLOSSUS OF RHODES.

This statue, the largest erect figure, and on many accounts one of the most remarkable, of ancient times, was placed at the entrance of the inner harbor of the city of Rhodes, at the time of its erection, one of the chief maritime cities of the world, the capitol of a small but populous and flourishing island, whose colonies, like those of the Phoenicians, were stretched along both shores of the Mediterranean as far as the pillars of Hercules.

A sea-wall, dividing the inner from the outer harbor, connected the piers up which the figure stood on either side of the entrance with the shore-walls of the city. Galley's entering the inner harbor passed between the feet and under the body of the figure, which was so enormous that the largest vessels went under without lowering their masts.

The figure represented Apollo, the guardian Deity of the Rhodesians, holding in one hand the bow and arrow with which he had slain the Python, and in the other a crosier which served to guide the mariner, and to light the entrance of the harbor. It was cast of bronze, of the enormous height of one hundred and seven feet. After standing for several centuries it was overthrown in a great earthquake, 70, B. C., and finally, being purchased by a Jew for old bronze, four hundred camels were loaded with its remains.



In the year 1620, there stood on the beach of a sandy shore, at the south-eastern curve of Massachusetts Bay, beneath an abrupt ridge facing the sea and some twenty to thirty feet high, a large boulder of greenish granite, upon whose top sometimes covered by the angry waves driven in before the north-east wind, probably no white man had ever stepped foot. On the 21st of December, a little shallop was steered to the foot of this rock, and upon it climbed, one after another, a small party of emigrants, seeking a home in the wilderness where they might worship God according to the light which he had given them. This sandy shore, then covered with woods, was the shore of Plymouth, the granite boulder was the Forefathers' Rock, and the party of sea-beaten, care-worn emigrants, were a portion of the Pilgrim Fathers.

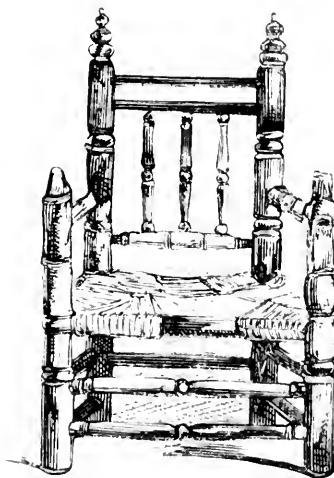
He who now reading their strange and eventful history, cannot see the finger of God tracing the course of this people, leading them through weary wanderings to this place of rest, and separating them from evil and troublesome companions by guiding them to this apparently inhospitable shore, must, indeed, be blind; and he who among their descendants can attempt to turn their trials and misfortunes into ridicule, or speak with irreverence, even of the spot made immortal by the mark of their foot-steps, is not without the cold heart and the shallow brain of the scoffer.

It was natural that the Pilgrims should themselves regard the rock merely as having been the place where they landed, and that their immediate descendants, with the cares of a new country upon their minds and hands, should have dwelt but little upon the hallowed associations which were gathering around it. Yet we find that in 1711, when it was proposed to build a wharf near the rock—whose position had been up to that time undisturbed—Elder Thomas Faunce, who was born in 1616, fearing that the rock might be injured, expressed great uneasiness;

and in the presence of many citizens, pointed it out as the one on which the Pilgrims had landed, from their own testimony repeatedly given to himself.

Not the pass where Leonidas and his companions turned back the waves of Persian invasion,—nor the slope upon which the brave Switzer, Winkelried, gathered into his own breast the sheaf of spears,—nor the spot where Hauppen fell in defence of right,—nor any place famous and hallowed in human story is more worthy to be held in perpetual remembrance, than this rock upon which were planted the feet of those who brought in themselves the germs of every quality essential to national greatness.

The rock was broken in two in an attempt during the Revolution to remove it to the Town Square. The piece represented in the engraving, is now placed in front of Pilgrim Hall, where it is surrounded with a heavy iron railing, upon which are the names of the passengers of the May Flower. The other piece remains in its original site; and the Pilgrim Society is erecting over it a canopy of granite, for the double purpose of enabling it to be seen, and to preserve it.



JOHN CARVER.

The first notice we have of John Carver, in the history of the Pilgrims, is at the time when they had determined, if possible, to settle somewhere by themselves in the territory of the Virginia Company, and endeavor to obtain from King James a special dispensation of religious liberty for themselves and their descendants,—and Carver and Cushman, who are represented as influential members of the congregation, were sent to England to negotiate with the company.

Carver was, at this time, a Deacon of the Church,—he took an active part in all the arrangements for the voyage and settlement,—was one of the passengers in the "May Flower," and, upon the signing of the social compact, was elected governor of the colony.

Shortly after the departure of the "May-Flower" for England, which occurred on the 15th of April, 1621, Governor Carver, who had been at work in the field, came home complaining greatly of his head. In a few hours he became speechless and insensible, and died after a short illness, to the inexpressible grief of the colonists, who attributed his death to mental anxiety and exhaustion occasioned by his ceaseless labors for the common good. His wife died but a few weeks afterwards. Bradford, whose faithfulness to the cause had been abundantly proved through the whole season of their trials and sufferings, was chosen to succeed him, with Isaac Allerton as his assistant.

Among the few memorials of the Pilgrims, preserved in Pilgrim Hall, is the chair of Governor Carver, represented above.



# JUNE.

## SOUTHING AND RISING OR SETTING OF THE PLANETS.

### TIME OF MOON'S PHASES, AT

	Washington.	St. Louis & N. O.	San Francisco.
D.	H. M.	H. M.	H. M.
○ FULL MOON,	3 11 35 M.	3 10 45 M.	3 8 35 M.
○ LAST QUAR.	11 7 56 M.	11 7 3 M.	11 4 54 M.
● NEW MOON,	19 0 15 M.	19 11 22 E.	18 9 13 E.
● FIRST QUAR.	25 7 28 E.	25 6 35 E.	25 4 26 E.

	FIRST DAY.	SIXTEENTH DAY.
	H. M.	H. M.
VENUS,	S'ths 3 5 E. Sets 10 35 E.	S'ths 2 29 E. Sets 9 54 E.
MARS,	Rises 10 53 E. S'ths 3 26 M.	Rises 10 4 E. S'ths 2 34 M.
JUPITER,	S'ths 3 3 E. Sets 10 33 E.	S'ths 2 17 E. Sets 9 45 E.
SATURN,	S'ths 4 52 E. Sets 11 56 E.	S'ths 3 57 E. Sets 11 0 E.

**Montreal.**  
British Prov'ns,  
N. W. States and  
Territor. Wash-  
ington Territory.

**Boston.**  
New England,  
N. York, Detroit,  
Chicago, Iowa,  
South'n Oregon.

**N. Y. City.**  
Penn, Ohio, In-  
diana, Illinois,  
Salt Lake City,  
North California.

**Washington.**  
Cincinnati, St.  
Louis, Kansas,  
Southern Utah,  
San Francisco.

**Charleston.**  
Gulf States,  
Texas, Arizona,  
San Diego.

**New York.**  
JUN E.

D. Day of	Sun.	Moon.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.	Rises.	Sets.	Sets.	SUN.	MOON.	Rises.	Sets.	Sets.	1.				
M. Week.	Souths.	Souths.	Rises.	Sets.	Sets.	Rises.	Sets.	Rises.	Sets.	Sets.													
	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.					
1	Fri.	11 58	10 30	4 14	7 41	2 19	4 26	7 30	2 28	4 31	7 25	2 32	4 36	7 19	2 37	4 53	7 3	2 51	1.	King of Greece born, 1815.			
2	Sat.	11 58	11 27	4 14	7 41	rises	4 25	7 31	rises	4 39	7 25	rises	4 36	7 20	rises	4 52	7 3	rises	1.	Port of Boston shut, 1774.			
3	○ S.	11 58	morn	4 13	7 43	8 19	4 25	7 31	8	5 4	30	7 26	7 59	4 36	7 20	7 52	4 52	7 4	7 32	4. Battle of Magenta, 1859.			
4	Mo.	11 58	0 26	4 13	7 44	9 14	4 24	7 32	9	0 4	30	7 27	8 54	4 35	7 21	8 47	4 52	7 4	8 28	6. Patrick Henry died, 1799.			
5	Tu.	11 58	1 23	4 12	7 44	9 57	4 24	7 33	9 45	4 29	7 27	9 29	4 35	7 22	9 33	4 52	7 5	9 16	6. Gen. Gaines died, 1849.				
6	W.	11 58	2 17	4 12	7 45	10 31	4 24	7 33	10 21	4 29	7 28	10 16	4 35	7 22	10 11	4 52	7 5	9 56	7. Gov. Sumner died, 1799.				
7	Th.	11 59	3	7 4	12	7 46	10 58	4 23	7 34	10 50	4 29	7 29	10 46	4 35	7 23	10 42	4 52	7 6	10 31	7. King George I. born, 1660.			
8	Fri.	11 59	3 53	4 12	7 46	11 20	4 23	7 35	11 14	4 29	7 29	11 11	4 34	7 23	11 11	4 51	7	6 11	8. Pres. Jackson died, 1845.				
9	Sat.	11 59	4 38	4 11	7 47	11 39	4 23	7 36	11 35	4 36	7 28	11 30	4 31	7 24	11 33	4 51	7	7 11	8. King Charles II. b. 1630.				
10	○ S.	11 59	5	17	4	11	7 48	11 56	4 23	7 35	11 55	4 28	7	30	11 55	4 34	7	24	11 54	4 51	7	7 11	9. Battle of Montebello, 1800.
11	Mo.	11 59	5 56	4	11	7 48	11 56	4 23	7 35	11 55	4 28	7	30	11 55	4 34	7	24	11 54	4 51	7	8 11	11. Pierce's Plymouth Patent signed, 1621.	
12	Tu.	0	0	6 36	4	11	7 49	0 14	4 22	7 37	0 15	4 28	7 31	0 16	4 34	7 25	0 16	4 51	7	8 18	11. Pierce's Plymouth Patent signed, 1621.		
13	W.	0	0	7 17	4	11	7 49	0 31	4 22	7 37	0 35	4 28	7 32	0 37	4 34	7 26	0 39	4 51	7	8 04	15. Pres. Polk died, 1849.		
14	Th.	0	0	8	0	4	10	7 50	0 52	4 22	7 38	0 58	4 28	7 32	1	1 4 34	7 26	1	4 51	7	9 11 13	14. Gov. Gardner born, 1819.	
15	Fri.	0	0	8 46	4	10	7 50	1 14	4 22	7 38	1 23	4 28	7 33	1 27	4 34	7 27	1 31	4 51	7	9 14 15	15. Pres. Polk died, 1849.		
16	Sat.	0	0	9 37	4	10	7 50	1 43	4 22	7 38	1 54	4 28	7 33	1 59	4 34	7 27	2	4 51	7	9 2 20	15. King George III. b. 1738.		
17	○ S.	0	1 10	32	4	10	7 51	2 22	4 22	7 39	2 35	4 28	7 33	2 41	4 34	7 27	2 47	4 51	7	10 3 6	17. Battle of Bunker Hill, 1775.		
18	Mo.	0	1 11	30	4	11	7 51	sets	4 23	7 39	sets	4 28	7 33	sets	4 34	7 28	sets	4 52	7	10	sets 18. Battle of Waterloo, 1815.		
19	Tu.	0	1	even	4	11	7 51	8 43	4 23	7 39	8 30	4 28	7 34	8 24	4 34	7 28	8 18	4 52	7	10 59	19. Richard Wright died, 1691.		
20	W.	0	1	2 19	7	11	7 52	9 24	4 23	7 40	9 13	4 28	7 34	9 34	4 34	7 28	9	3 4 52	10	8 47	20. King William IV. d. 1837.		
21	Th.	0	2	2 26	4	11	7 52	9 57	4 23	7 40	9 49	4 29	7 34	9 45	4 35	7 28	9 41	4 52	7	11 29	21. Gilbert's Pat. granted, 1578.		
22	Fri.	0	2	3 20	4	11	7 52	10 23	4 23	7 40	10 18	4 29	7 37	10 16	4 35	7 28	10 18	4 52	7	11 22	22. Arbella arr. at Salem, 1630.		
23	Sat.	0	2	4 11	4	11	7 52	10 48	4 23	7 40	10 45	4 29	7 35	10 44	4 35	7 29	10 20	4 52	7	11 10	22. King George I. died, 1727.		
24	○ S.	0	2	5	0	4	12	7 52	11	9 4	24	7 41	11	9 4	35	7 29	11	9 4 53	7	11 11 10	23. Longest day.		
25	Mo.	0	2	5 49	4	12	7 53	11 30	4 24	7 40	11	33	4 30	7 35	11 34	4 36	7 29	11 36	4 53	7	11 11 41	24. St. JOHN BAPT. MIDSUM'R.	
26	Tu.	0	3	6 38	4	12	7 53	11 53	4 24	7 40	11	59	4 30	7 35	11 54	4 36	7 29	11 55	4 54	7	11 26	26. King George IV. d. 1830.	
27	W.	0	3	7 29	4	12	7 53	morn	4 25	7 40	morn	4 31	7 35	0	4 2 36	7 29	0	4 5 54	7	12 0 13 27	Maj. Wm. Bradford b. 1624.		
28	Th.	0	3	8 22	4	14	7 52	0 20	4 25	7 40	0 29	4 31	7 35	0 33	4 37	7 29	0 37	4 51	7	12 0 49 28	Pres. Madison died, 1836.		
29	Fri.	0	3	9 18	4	14	7 52	0 52	4 26	7 40	1 3	4 32	7 35	1	8 4 38	7 29	1 13	4 55	7	12 1 29 28	First duel in N. E. 1621.		
30	Sat.	0	3	10 15	4	15	7 52	1 33	4 27	7 40	1 46	4 32	7 35	1 52	4 38	7 29	1 58	4 55	7	12 2 16 29	King James I. born, 1566.		

## STATUE OF SAN CARLO BORROMEO

## WATER.

Near the town of Arona, in Piedmont, upon a considerable eminence overlooking the Lake Maggiore, stands the colossal statue of San Carlo Borromeo. It was erected in 1596, to the memory of the sainted bishop of Milan, whose benevolent life had conferred many blessings upon the people of Northern Italy. Placed in a commanding position, it presents a majestic appearance from the lake and surrounding country; and is really a work of high excellence. The saint is represented in full canonicals, holding a breviary in his left hand, while the right is outstretched in the act of benediction. The pedestal upon which it stands is of granite, and is about forty-six feet high. The face, hands, and feet of the figure are cast in bronze; the dress is made of plates of copper; and the whole figure is sustained upon a column of masonry. Persons desirous of attaining a high position can ascend the figure to the eyes; but this is attended with some difficulty, the first part of the ascent being made by means of a ladder, as represented in the engraving, and the upper portion by means of footholds between the masonry and external covering. The figure is sixty-six feet high.



## PORTRAIT OF GOVERNOR WINSLOW.

The original of the accompanying likeness is in the rooms of the Massachusetts Historical Society, in Boston. It is the only portrait which exists of a passenger of the *May Flower*.

Edward Winslow joined the Puritans under Robinson at Leyden, in the year 1617, while journeying on the Continent with his wife. Combining with the piety which distinguished the rest of the Pilgrims, a knowledge of the world and society, and great energy in the practical pursuits of life, he was a valuable addition to their number. He took an active part in all the affairs of the emigration of the infant colony, and was enabled by his influence no less than by his labors to render the colonists essential service.

He conducted the first conference with the Indians when Massasoit came to visit the settlement; was four times sent to England as agent of the colonies of Plymouth and Massachusetts Bay; and in 1633, was chosen governor of the Plymouth Colony, a station to which he was twice afterwards re-elected. The first importation of cattle into New England in 1623, was made by him, and consisted of one bull and three heifers.

Being appointed by Cromwell, one of three commissioners to overlook the expedition against the Spaniards in the West Indies, he died at sea, in the year 1655, in the sixtieth year of his age.

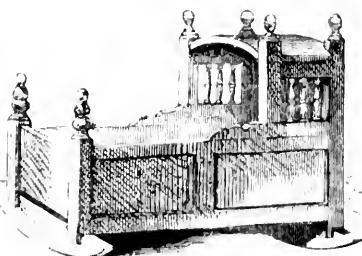
There is no material substance whose transformations are more marvellous, and whose relations are more complex and extensive, than those of water. A recent writer says, —

You take in your hand a hailstone, and it rapidly changes into a transparent fluid, which gradually vanishes, only to reappear, during frosty weather, in dew-drops upon your window, where it resumes, in delicate ramifications, its former crystalline solidity. You place another under a bell-glass with thrice its weight of lime, and it soon melts and disappears, leaving behind it four parts instead of three of perfectly dry earth. You subject an opal to chemical analysis, and find it but a combination of flint and water, the latter being to the former as one to nine. Of the alum, the carbonate of soda and the soap which you purchase of your grocer, the first contains forty-five, the second sixty-four, and the third, from seventy to seventy-three and a half parts of solidified water. The clay-field which you plough contains a ton of water to every three tons of soil; nay, the very air which you inhale in ordinary weather holds diffused throughout every cubic foot of its bulk fully five grains of rarefied water, which no more wets the air than the solidified water wets the lime or the alum in which it is absorbed.

## GOLD.

A cubic inch of gold is worth one hundred and forty-six dollars; a cubic foot, two hundred and fifty-two thousand two hundred and eighty-eight dollars; a cubic yard, six millions eight hundred and eleven thousand seven hundred seventy-six dollars. The quantity of gold now in existence is estimated to be three thousand millions of dollars, which, welded into one mass, could be contained in a cube of twenty-three feet.

The relative value of gold to silver, in the days of the patriarch Abraham, was one to eight; at the period of B. C. 1000, it was one to twelve; B. C. 500, it was one to thirteen; at the commencement of the Christian Era, it was one to nine; A. D. 500, it was one to eighteen; A. D. 1100, it was one to eight; A. D. 1400, it was one to eleven; A. D. 1613, it was one to thirteen; A. D. 1700, it was one to fifteen and a half; which latter ratio, with but slight variation, it has maintained to the present day.



## FULLER CRADLE.

The cradle, of which a representation is given above, was originally the family cradle of Dr. Samuel Fuller, one of those who came over in the "May-Flower," and one of the signers of the Social Compact. His wife was left behind, but came over afterwards in the "Anne." Fuller was a deacon of the church, and no less remarkable for his piety than for his skill in his profession. He was sent by the Governor to the assistance of Weston's company, and afterwards to Boston, to the colonists, who came over with Winthrop. He died of an epidemic disease in 1633. A tradition exists, that this cradle was on board the "May-Flower," and used to rock Peregrine White, the first New Englander. It was made, like most old-fashioned furniture, to be handed down from generation to generation, and seems to have well fulfilled the intention.



### TIME OF MOON'S PHASES, AT

### SOUTHING AND RISING OR SETTING OF THE PLANETS.

	Washington.	St. Louis & A. O.	San Francisco.		First Day.		Sixteenth Day.
	D. H. M.	D. H. M.	D. H. M.		H. M.	H. M.	H. M.
○ FULL MOON.	2 10 59 E.	2 10 6 E.	2 7 57 E.	VENUS,	S'ths 1 45 E.	Sets 8 48 E.	S'ths 0 17 E. Sets 7 13 E.
○ LAST QUAR.	11 0 50 M.	10 11 57 E.	10 9 48 E.	MARS,	Rises 9 8 E.	S'ths 1 31 M.	Rises 8 3 E. S'ths 0 18 M.
● NEW MOON.	18 9 12 M.	18 8 19 M.	18 6 10 M.	JUPITER,	S'ths 1 31 E.	Sets 8 46 E.	S'ths 0 45 E. Sets 8 0 E.
● FIRST QUAR.	25 0 32 M.	24 11 39 E.	24 9 30 E.	SATURN,	S'ths 3 4 E.	Sets 9 57 E.	S'ths 2 12 E. Sets 9 4 E.



	Montreal.	Boston.	N. Y. City.	Washington.	Charleston.	MEMORABILIA
	British Prov'n's, N. W. States and Territories, Wash'ngton Territory.	New England, Penn., Ohio, Indiana, Iowa, Salt Lake City, South'rn Oregon.	Cincinnati, St. Louis, Kansas, Southern Utah, San Francisco.	Gulf States, Texas, Arizona, San Diego.		J U L Y .

D	David	Sun.	Mo.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.		
D.	Week	Sat.	Sun.	Rises.	Sett.	Rises.	Sett.	Rises.	Sett.	Rises.	Sett.	Rises.	Sett.		
1	S	0	4 11 12	4 15 7 52	7 14 4 27 7 40	6 50 4 33 7 31	6 43 4 38 7 29	6 30 4 56 7 12	6 16	1. Massacre of Wyoming, 1758.					
2	Mo	0	4 morn	4 16 7 52	7 52 4 27 7 40	7 39 4 33 7 34	7 23 4 39 7 29	7 27 4 56 7 11	7 8	2 Pres. Monroe vis. Bost, 1817.					
3	Tu	0	4 0 7 4 16 7 51	8 29 4 28 7 40	8 18 4 34 7 34	8 13 4 39 7 28	8 8 4 56 7 11	7 52	4. Independence, 1776. [1826.]						
4	W	0	4 0 58 4 17 7 51	8 59 4 29 7 39	8 50 4 34 7 34	8 46 4 40 7 28	8 42 4 57 7 11	8 29	4. Pres. J. Adams & Jeff's'n d.						
5	Th	0	4 1 14 6 4 18 7 51	9 22 4 29 7 39	9 16 4 35 7 34	9 13 4 40 7 28	9 10 4 57 7 11	9 0	4. Pres. Monroe died, 1831.						
6	Fri	0	4 2 31 4 18 7 50	9 43 4 30 7 39	9 39 4 35 7 33	9 37 4 41 7 28	9 35 4 58 7 11	9 29	5. Battle of Chippewa, 1816.						
7	Sat	0	5 3 13 4 19 7 50 10	1 4 30 7 38	9 59 4 36 7 33	9 55 4 42 7 27	9 57 4 58 7 11	9 55	6. John Marshall died, 1835.						
8	S	0	5 3 53 4 20 7 49	10 17 4 31 7 38	10 18 4 37 7 33	10 18 4 42 7 27	10 19 4 59 7 10	10 19	7. Bat. of Ticonderoga, 1758.						
9	Mo	0	5 4 32 4 21 7 49	10 35 4 32 7 35	10 38 4 36 7 37	10 32 10 39 7 43	10 41 4 59 7 10	10 45	9. Braddock's defeat, 1755.						
10	Tu	0	5 12 4 21 7 48	10 54 4 33 7 37	10 59 4 38 7 37	11 4 43 7 26	11 4 5 6 7 10 11 12	9 29	9. Sec'y Morton d. 1685. [1629.]						
11	W	0	5 54 4 22 7 48	11 15 4 23 7 37	11 23 4 39 7 31	11 21 4 44 7 26	11 50 5 6 7 10 11 42	9 29	9. Higginson arrived at Salem.						
12	Th	0	6 3 8 24 3 27 7 47	11 41 4 31 7 36	11 51 4 39 7 31	11 56 4 45 7 26	11 56 5 17 9 morn	9	9. Pres. Taylor died, 1850.						
13	Fri	0	6 7 26 4 24 7 46	morn 4 35 7 35	morn 4 40 7 30	morn 4 45 7 25	0 1 5 17 9	0 15 11	11. Pres. J. Q. Adams b. 1767.						
14	Sat	0	6 8 18 4 25 7 46	0 15 4 36 7 35	0 27 4 41 7 30	0 32 4 46 7 25	0 28 5 27	9	0 56 12 Pulg. visit Poconoket, 1821.						
15	S	0	6 9 15 4 26 7 45	0 57 4 36 7 34	1 11 4 42 7 29	1 17 4 47 7 24	1 24 5 37	8	1 43 13 Mrs. Anne Lettice d. 1687.						
16	Mo	0	6 10 14 4 27 7 41	1 53 4 37 7 34	2 7 4 42 7 29	2 14 4 45 7 23	2 20 5 37	8	2 40 15 Napol'n's'l'd for Ella, 1815.						
17	Tu	0	6 11 14 4 28 7 41	sets 4 38 7 33	sets 4 43 7 28	sets 4 48 7 23	sets 5 4 7 7	sets 16	Stony Point taken, 1779.						
18	W	0	6 even 4 29 7 43	7 51 4 39 7 32	7 42 4 44 7 27	7 38 4 49 7 22	7 33 5 5 7	7	7 19 17. Gov. Gerry born, 1744.						
19	Th	0	6 1 10 4 30 7 42	8 25 4 40 7 31	8 19 4 45 7 27	8 16 4 50 7 21	8 13 5 5 7	6	8 4 18 Commencement Harv. Col.						
20	Fri	0	6 2 4 31 7 41	8 51 4 41 7 31	8 48 4 46 7 26	8 46 4 51 7 21	8 45 5 6 7	6	8 40 19 Alumni Celebration Harv.						
21	Sat	0	6 2 55 4 32 7 40	9 14 4 42 7 39	9 13 4 47 7 25	9 13 4 51 7 20	9 12 5 6 7	5	9 12 20. Calvin born, 1509. [Col.						
22	S	0	6 3 45 4 32 7 39	9 36 4 43 7 29	9 38 4 48 7 24	9 39 4 52 7 19	9 40 5 7 7	5	9 41 21 Robert Burns died, 1796.						
23	Mo	0	6 4 35 4 34 7 38	9 58 4 47 7 20	3 4 48 7 24 10	5 4 53 7 19 10 8 5 8 7	4 10 16 22 Duke of Reichstadt d. 1832.	4 10 52 23 Bunker Hill Mon. compleat.							
24	Tu	0	6 5 26 4 35 7 37	10 24 4 45 7 27	10 32 4 49 7 23	10 36 4 54 7 18 10 39 5 8 7	4 10 52 23								
25	W	0	6 19 4 36 7 36	10 55 4 46 7 26	11 5 4 50 7 22	11 10 4 55 7 17 11 5 5 7	3 11 30 24. Bolivar born, 1783. [1842.								
26	Th	0	6 7 13 4 37 7 35	11 32 4 47 7 25	11 44 4 51 7 21	11 50 4 56 7 16 11 56 5 10 7	2 morn 25. Va. chart. supplied. 1821.								
27	Fri	0	6 8 10 4 38 7 33	morn 4 48 7 24	morn 4 52 7 20	morn 4 57 7 15 morn 5 10 7	2 0 15 25. Dog Days begun. [Colleges.								
28	Sat	0	6 9 6 4 39 7 32	0 17 4 49 7 23	0 21 4 53 7 19	0 37 4 57 7 14 0 41 5 11 7	1 1 5 26. Com. Yale and Dartmouth								
29	S	0	6 10 1 4 41 7 31	1 12 4 50 7 22	1 26 4 54 7 18	1 32 4 58 7 13 1 39 5 12 7	0 2 0 27. Dr. Watts born, 1674.								
30	Mo	0	6 10 53 4 42 7 30	2 15 4 51 7 21	2 28 4 55 7 17	2 34 4 59 7 13 2 40 5 13 6 59 3 0 28	Wilberforce died, 1833.								
31	Tu	0	6 11 42 4 43 7 29	3 23 4 52 7 20	3 35 4 56 7 16 3 40 5 6 7 12	3 46 5 13 6 59 4 2 31. Perigrine White died, 1701.									

## THE APPENINE JUPITER.

The cedar-wood cut represents the colossal statue of Jupiter Elysius, in the grounds of the Villa Pratolina, executed for the Grand Duke of Tuscany, Francesco I., by John of Bologna and his pupils, — about the year 1570. The statue is mainly cut out of the original rock, and represents Jupiter crushing with a fragment of rock, and apparently with but slight effort, an immense marine monster, from whose mouth issues quite a cascade, — a stream from the mountains behind having been turned somewhat from its original direction, and caused to flow under the statue and through the jaws of the monster.

The attitude and action of the figure can scarcely be considered elegant, but the proportions are excellent, and the forms, more especially of the face, hands, and more delicate parts, are modelled with masterly accuracy and beauty. The statue is of enormous size, the figures at the feet giving a scale by which to estimate its magnitude.

## A NOBLE EPITAPH.

The countrymen of James Watt, properly cherish the name and fame of the inventor, shown in part by a colossal statue from the chisel of Chantrey, standing in Westminster Abbey, bearing the following inscription from the pen of Lord Brougham: —

“Not to perpetuate a name which must endure while the peaceful arts flourish, but to show that mankind have learnt to honor those who best deserve their gratitude, the King, his Ministers and many of the Nobles and Commoners of the realm reared this monument to JAMES WATT, who, directing the force of an original genius, early exercised in philosophical research, to the improvement of the Steam Engine, enlarged the resources of his country, increased the power of man, and rose to an eminent place among the most illustrious followers of science, and the real benefactors of the world. Born at Greenock MDCCXXXVI. Died at Heathfield in Staffordshire MD CCXIX.”



## DWELLINGS OF THE PILGRIMS.

De Ruysser, who visited Plymouth in 1627, in a letter preserved in the library at The Hague, gives this account of the settlement. “The houses are constructed of hewn planks, with gardens enclosed behind and at the sides with boards. To prevent surprise, each had beside a defensive stockade, and there were three wooden gates at the extremities of the streets. In the centre, on the cross street, stood the Governor's house, before which was a square enclosure, upon which four *petcocks* were mounted so as to flank the streets. Upon Board (then called Fort) Hill, was a large square house with a flat roof, made of thick sawn planks, stayed with oak beams, upon the top of which they had six four or five peals of bells, which commanded the whole neighborhood. The lower part of this fort was used on Sundays for a church.”

Immediately after the landing, the Pilgrims commenced to erect their dwellings. In the afternoon of January 7th, they went to measure out the grounds, having first divided the whole company into nineteen families. On the 10th of January, they divided the land by lot after the proportion before determined on, first laying out a street, which they named Leyden street. They agreed that each man should build his own house, but that all should work upon the common house at the bottom of the street, which they had laid out about twenty feet square, and which was to be the general rendezvous until the other houses could be completed. All, also, were to assist in building the fort, the house, and the stockade.

The houses appear to have been frame houses, covered with planks, and finally, but after a considerable interval, had clapboards plastered on the inside. The windows at first were small, with diamond-shaped sashes; and, glass being a great luxury, were filled with oiled paper.

None of the houses erected by the Pilgrims now remain. They were probably replaced quite early by more substantial and better finished structures. The Allyn House, shown in the engraving, which was standing a few years since, was the last specimen of these later buildings, itself quite quaint and primitive in appearance, — and bearing a strong resemblance to the old building near Faneuil Hall, Boston, erected in the year 1680.

## TRIBUTE TO THE PILGRIM FATHERS.

The late Hon. John C. Calhoun, in his letter to the New England Society Committee at Washington, declining their invitation to a dinner on the anniversary of Fore-father's Day, thus speaks of the Pilgrims: — “By what causes has so inconsiderable a beginning, under such formidable, and apparently almost insurmountable difficulties, resulted in so brief a period in such mighty consequences? They are to be found in the high moral and intellectual qualities of the Pilgrims. Their faith, piety, and confident trust in a Superintending Providence; their stern virtues; their patriotic love of liberty and order; their devotion to learning; and their indomitable courage and perseverance. These are the causes which have surmounted every obstacle, and led to such mighty results.”

## RAILROADS.

The first public railway in Great Britain was a rude affair, but it was built after many persons we daily meet in the streets had attained to man's estate. The first railway in America was constructed at Quincy, Mass., in 1827. On the 3d of April, in the year 1834, the locomotive engine Meteor ran over a portion of the Boston and Worcester Railroad, carrying in the tender one of the directors, with his wife, — the first time a lady was ever carried over a railway by steam power in New England. The following statements show the immense amount of capital that has been invested in a few of the principal lines in Great Britain and America.

The largest railway in Great Britain has a paid-up capital of twenty-three millions sterling, and a funded debt of eleven millions sterling, making together nearly one hundred and seventy millions of dollars. Three other English railway companies have each expended upwards of twenty millions sterling; five others have more than ten millions; three, more than eight millions each. The seventeen leading railways of Great Britain have expended an aggregate of one thousand million dollars. The annual receipts of the largest of these corporations (the London and North-western) are \$15,000,000, and the annual dividends have averaged four per cent.

The accompanying list gives the outlay of six of the leading lines in the United States. New York Central, \$39,000,000; New York and Erie, \$36,000,000; Baltimore and Ohio, \$25,000,000; Illinois Central, \$25,000,000; Pennsylvania Central, \$19,000,000; Reading, \$19,000,000. The Grand Trunk (Canada) road has occasioned an outlay of \$50,000,000.

The railroads in the six New England States are about four thousand miles in length, and have cost more than one hundred and fifty million dollars. They are nearly all owned by the people of this section of the country, and have doubtless enriched the States in which they are located far more than they have cost.



# AUGUST.

## TIME OF MOON'S PHASES, AT

## SOUTHING AND RISING OR SETTING OF THE PLANETS.

	Washington.	St. Louis & N. O.	Nan Francisco.		FIRST DAY.		SIXTEENTH DAY.
D. H. M.	D. H. M.	D. H. M.	D. H. M.	H. M.	H. M.	H. M.	H. M.
○ FULL MOON.	1 0 23 E.	1 11 32 M.	1 9 23 M.	Rises 3 50 M.	S'ths 10 44 M.	Rises 2 44 M.	S'ths 9 41 M.
○ LAST QUAR.	9 4 15 E.	9 3 22 E.	9 1 13 E.	S'ths 10 52 E.	Sets 3 3 M.	S'ths 9 45 E.	Sets 1 51 M.
● NEW MOON.	16 5 12 E.	16 4 19 E.	16 2 10 E.	MARS,	JUPITER,	S'ths 11 57 M.	Sets 7 6 E.
○ FIRST QUAR.	23 7 42 M.	23 6 49 M.	23 4 40 M.	S'ths 11 57 M.	Sets 8 5 E.	Rises 4 3 M.	S'ths 11 8 M.
○ FULL MOON.	31 8 39 M.	31 2 56 M.	31 0 47 M.	S'ths 1 16 E.	Sets 9 5 E.	S'ths 0 24 E.	Sets 7 11 E.

## Montreal.

British Prov'n,  
N. W. States and  
Territor's, Wash-  
ington Territory.

## Boston.

New England,  
New York, Detroit,  
Chicago, Iowa,  
South'n Oregon.

## N. Y. CITY.

Pennia, Ohio, In-  
diana, Illinois,  
Salt Lake City,  
North California.

## Washington.

Cincinnati, St.  
Louis, Kansas,  
Southern Utah,  
San Francisco.

## Charleston.

Texas, Arizona,  
San Diego.

## MEMORIALS

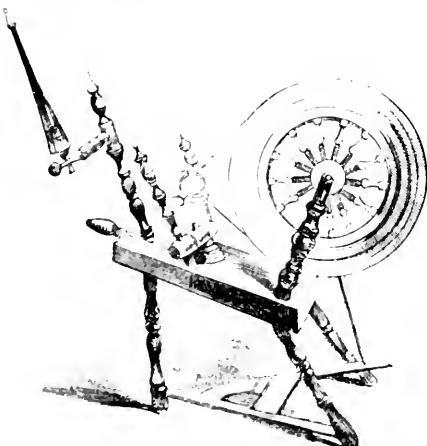
### AUGUST

D. Day of	Sun.	Moon.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.	SUN.	MOON.
M. Week.	Souths.	Souths.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.
1 W.	b.	h.	m.	b.	m.	b.	m.	b.	m.	b.	m.	b.	m.	b.
2 Th.	0	6	0 27	4 45	7 26	7 48	4 54	7 18	7 43	4 58	7 14	7 41	5 27	9 7 38
3 Fri.	0	6	1 10	4 46	7 25	8 7	4 55	7 16	8 4 4	5 57	12 8	3 5	3 7	8 1 5 15
4 Sat.	0	6	1 50	4 47	7 23	8 23	4 56	7 15	8 0 7	11 11	5 17	11 7 12	5 14	6 58
5 S.	0	6	2 20	4 49	7 22	8 41	4 57	7 14	8 4 8	5 17	10 8 44	5 5 7	6 8 45	5 17 6 54
6 Mo.	0	6	3 10	4 50	7 20	8 59	4 58	7 13	9 3 5	27	9 9 5 5	5 5 7	5 9 7 5	17 6 53
7 Tu.	0	5	3 20	4 51	7 19	9 19	4 59	7 11	9 2 6	5 3	8 7 9 29	5 6 7	4 9 32	5 18 6 52
8 W.	0	5	4 33	4 52	7 18	9 43	5 0 7	10 9	5 9 2	5 4 7	6 9 56	5 7	7 3 10	1 5 19 6 51
9 Th.	0	5	5 18	4 53	7 16	10 12	5 17	9 10	23	5 5 7	5 10 28	5 8 7	1 10	34 5 19 6 51
10 Fri.	0	5	6 7	4 55	7 15	10 19	4 5 9	2 7	11 1	2 5 6	4 11 8	5 9 7	0 11	14 5 20 6 50 11 31
11 Sat.	0	5	7 1	4 56	7 13	11 37	5 3	6 11	5 15	7 3	11 38 5	10 6 59	5 21 6 49	10 11 49 10
12 S.	0	5	7 57	4 57	7 11	11 37	5 4	7	5 1	5 7	1 1 11 6 58	0 4 2 5 21 6 47	0 2 5 12	Queen Anne died, 1714.
13 Mo.	0	5	8 56	4 58	7 10	0 28	5 5 7	4 0 52	5 8 7	0 0 58	5 12 6 57	1 5 5 22 6 46	1 2 6 12	K. George IV. b. 1762. [1492.
14 Tu.	0	4	9 56	5 67	8 0	5 0 5	6 7	6 2	2 5	9 6 59	1 8 5 13 6 53	2 1 4 5 23 6 45	2 3 22	Columbus s'l'd from Palos
15 W.	0	4 10	54	5 17	7 2	11 5	7 7	0 3 21	5 11 6 57	5 2 26	5 14 6 54	3 30 5 20 6 44	3 4 16 3	Battle of Blenheim, 1704.
16 Th.	0	4 even	5 27	5 sets	5 9 6	59 sets	5 12 6 56	5 56	sets 5 15 6 53	sets 5 24 6 43	sets 5 24 6 43	sets 5 24 6 43	sets 5 24 6 43	15. Pilgrims emb. fr. So. Hamp'n
17 Fri.	0	4 0 43	5 37	3 7	7 15	5 10 56	5 7	7 13	5 15 6 54	7 12 5 15 6 51	7 11 5 25 6 42	7 2 9 15	Com. Williams Col. [1620.	
18 Sat.	0	4 1 35	5 57	2 7	7 28	5 11 6 56	7 39	5 14 6 53	7 39 5 16 6 50	7 49 5 26 6 41	7 42 16	Battle of Bennington, 1777.		
19 S.	0	3 2 27	5 67	0 8	2 5 12	6 54	8 4 6 5 15 6 52	8 5 8 17 6 49	8 10 5 26 6 40	8 17 17	Lafayette landed at N. Y.			
20 Mo.	0	3 3 19	5 7 6 58	8 27	5 13 6 53	8 34	5 16 6 50	8 37	5 18 6 47	8 49 5 27 6 39	8 51 17	K. James II. d. 1701. [1821.		
21 Tu.	0	3 4 13	5 8 6 57	8 57	5 14 6 51	9 5 5 17 6 51	9 10 5 19 6 49	9 49 5 26 6 38	9 30 18	Gov. Bowdoin b. 1727. [1846.				
22 W.	0	3 5 8 5	9 6 55	9 31	5 15 6 49	9 48 5 17 6 47	9 49 5 20 6 41	9 54 5 28 6 36	10 13 20	Boston Water Works com.				
23 Th.	0	2 6 5 5	11 6 53	10 15	5 16 6 48	10 28 5 18 6 46	10 34 5 21 6 43	10 41 5 29 6 35	11 1 21	K. William IV. born, 1765.				
24 Fri.	0	2 7 2 5	12 6 51	11 8 5	17 6 46	11 22 5 19 6 44	11 29 5 22 6 41	11 35 5 29 6 31	11 56 22	Wash. City tak. 1812. [1620.				
25 Sat.	0	2 7 57	5 13 6 50	morn 5 18 6 45	morn 5 20 6 43	morn 5 23 6 40	morn 5 23 6 33	morn 5 23 6 33	morn 23	Pilgrims put into Dartm'th.				
26 S.	0	1 8 49	5 14 6 48	0 8 5 19 6 43	0 21 5 21 6 41	0 27 5 24 6 30	0 34 5 31 6 32	0 54 24	6 7	S. BARTHOLOMEW'S DAY.				
27 Mo.	0	1 9 30	5 15 6 46	1 14 5 20 6 41	1 25 5 22 6 39	1 31 5 25 6 37	1 36 5 31 6 39	1 54 26	6 27	Hutchinson mobbed, 1755.				
28 Tu.	0	1 10 25	5 16 6 44	2 21 5 21 6 40	2 30 5 23 6 38	2 34 5 26 6 30	2 39 5 32 6 29	2 56 27	6 27	Battle of Long Island, 1776.				
29 W.	0	1 11 8 5 18 6 42	3 27 5 22 6 28	3 34 5 24 6 36	3 37 5 26 6 31	3 41 5 33 6 28	3 53 29	5 29	Bat. of Rhode Island, 1778.					
30 Th.	0	0 11 49	5 19 6 41	rises 5 23 6 37	rises 5 25 6 35	rises 5 27 6 33	rises 5 33 6 27	rises 5 33 6 27	rises 5 33 6 27	Sun & C'k together [1620.				
31 Fri.	0	0 morn	5 20 6 39	6 30 5 24 6 35	6 29 5 26 6 33	6 34 5 28 6 31	6 31 5 34 6 25	6 27 31	6 27 31	Pilg'ms s'l'd 2d time but ret.				

## STATUE OF PETER THE GREAT.

At the western extremity of the Admiralty at St. Petersburg, stands the colossal statue of Peter the Great, founder of the Russian Empire, — erected to his memory by the Empress Catharine, II. The figure of the Czar is eleven feet in height; the horse seventeen. The group was cast at a single jet; and although the bronze is in no place more than an inch thick, yet the total weight is about seventeen tons. The pedestal is a huge block of granite, forming on the top an inclined plane, upon which the horse is prancing. It was brought from a marsh, four miles from St. Petersburg, by means of grooved tramways, in which cannon balls were rolled, and as the rock was drawn forward the balls over which it had passed were replaced in front. On one face of the pedestal is the inscription, "PIETRI PRIMO CATHARINA SECUNDA MDCCLXXXV"; and on the opposite face is the same in the Russian language. The group is the work of Falconet; and is remarkable for the grandeur of its conception and its striking effect.

A few years since some American sailors, in St. Petersburg, sallied forth for a frolic, and one of them, climbing over the palisades, mounted the horse and seated himself behind the Emperor. He was speedily arrested; and after a night's incarceration, adjudged to pay a heavy fine, against which he strongly remonstrated; but to no purpose, the judge remarking, "No; we can make no abatement; if you choose to ride with the Emperor you must pay imperial prices."



## OLD-FASHIONED SPINNING WHEEL.

It is perhaps doubtful if the old spinning wheel preserved in a pile in Pilgrim Hall really came over in the Mayflower; but its appearance certainly bespeaks for it antiquity; and it may, for aught which is known to the contrary, be the identical one at which Priscilla received the messenger of the redoubtable Capt. Standish, and put the memorable and pertinent question, "Why don't you speak for yourself, John?"

## R.V. JOHN ROBINSON.

The birth-place of Robinson is unknown, although he is believed to have been a native of Lincolnshire; nor is it positively ascertained whether he received his education at Corpus Christi or Emmanuel College. After his ordination he commenced his ministerial labors at Mundham, in the vicinity of Norwich, where he was suspended from the ministry on account of non-conformity. Retiring to Norwich, he gathered a small Puritan congregation, with whom he remained for some years, exposed to the most harassing persecution.

He joined the congregation at Scrooby about 1601, as an assistant to Smyth and Cartwright; and after their emigration to Holland, retained the charge of their little flock until circumstances compelled them all to seek an asylum from their enemies in a foreign land.

He was a man of gentle and beautiful character, singularly free from bigotry, extremely liberal in his ideas and

feelings; and well-fitted to watch over the interests of his people, to sustain their drooping spirits, to unite them in the bands of brotherhood, to sympathize with them in sorrow, and to lead them through the crooked and narrow path which they were obliged to travel.

As soon as the Pilgrims had established themselves in Leyden, Robinson, Brewster, and other principal members took measures for organizing a church; and not long afterwards, he having in the meantime acquired the Dutch language, Robinson was admitted a member of the University. He was much esteemed by the Dutch professors, and his intellectual powers were regarded so highly that he was selected by them to defend the tenets of Calvinism against Episcopacy, the most able advocate of Arminianism, a controversy in which he achieved a complete triumph.

After the departure of the younger and more active portion of his congregation for America, Robinson lived in the hope of joining them, with those who had remained behind. But this desire was defeated by want of means, and by intrigues which prevented the merchant adventurers from advancing money for the voyage.

In the latter part of February, 1625, he was taken with a mortal illness, and died at Leyden on the 11th of March. His remains were buried in the Church of St. Peter, as appears from a receipt for his burial fees, and a record in the book of interments, but no stone marks the place where he rests.

In the "Atlantic Monthly" for July, 1859, is the following beautiful poem, by Prof. Holmes, which is copied by the kind permission of the publishers.

## ROBINSON OF LEYDEN.

He sleeps not here; in hope and prayer

His wandering flock had gone before,  
But he, the shepherd, might not share

Their sorrows on the wintry shore.

Before the Speedwell's anchor swung,

Ere yet the Mayflower's sail was spread,  
While round his feet the Pilgrims clung,

The pastor spake, and thus he said:

"Men, brethren, sisters, children dear!

God calls you hence from over seas;

Ye may not build by Haerlem Meer,

Nor yet along the Zuyder-Zee.

Ye go to bear the saving word

To tribes unmanned and shores untrod;

Heed well the lessons ye have heard

From those old teachers taught of God,

Yet think not unto them was lent

All light for all the coming days,

And Heaven's eternal wisdom spent

In making straight the ancient ways.

The living fountain overflows

For every flock, for every lamb,

Nor heeds, though angry creeds oppose

With Luther's duke or Calvin's dame."

He spake, with lingering, long embrace,

With tears of love and partings fond

They floated down the creeping Maas,

Along the isle of Ysselmond.

They passed the frowning towers of Briel,

The "Hoek of Holland's" shelf of sand,

And grated soon with lifting keel

The sulken shores of Fetherland.

No home for these! —too well they knew

The mated king behind the throne; —

The sails were set, the pennons flew,

And westward ho! for worlds unknown.

—And these were they who gave us birth,

The Pilgrims of the sunset wave,

Who won for us this virgin earth,

And freedom with the soil they gave,

The pastor slumbers by the Rhine, —

In alien earth the exiles lie, —

Their nameless graves our holiest shrine,

His words our noblest battle-cry!

Still ery them, and the world shall hear

The dwellers by the storm-swept sea!

Ye have not built by Haerlem Meer,

Nor on the land-locked Zuyder-Zee!



## SEPTEMBER.

TIME OF MOON'S PHASES, AT

## SOUTHING AND RISING OR SETTING OF THE PLANETS.

## THE BAVARIA.

The colossal statue of Bavaria stands on a small eminence, about forty feet high, in the western outskirts of the city of Munich; a broad avenue lies in front, and behind, forming a kind of back ground, but by no means adding to the effect of the statue, is the Ruhmeshalle, or Hall of Heroes, a Doric Temple of white marble, intended for the reception of busts of celebrated Bavarians. The idea originated with King Louis, and he gave the commission to execute the statue to Schwanthaler, who had already produced for him several works of the highest merit. The immediate result of the commission was the production of several sketch models, from which the King selected the original of the present statue, and it was at once modelled by the artist, thirteen feet high, — and re-produced by his assistants, Messrs. Stiglmeyer and Lazarini, to the required size. This work occupied two years, when the model was submitted to the public previous to being cast.

The immense amount of bronze required for the work was obtained from the cannons lost at the battle of Novara, which were raised by Greek divers, with the permission of the government. The statue weighs about one hundred and fifty tons.

The figure is fifty-four feet high, — the head seven feet, — the diameter of the body twelve feet, — that of the index-finger six inches. It stands on a granite pedestal thirty-five feet high, approached by an immense flight of steps. It is emblematic of Bavaria, and represents a virgin of exquisite symmetry of proportions, — serene and august presence, — holding out to her children the wreath of victory. In her right hand is an antique sword, — her left is uplifted with the wreath, — she is crowned with a chaplet of oak leaves, from beneath which masses of hair drop upon her shoulders, — a lion's skin encircles her waist, and at her side sits the lion of the kingdom, as if on guard.

The casting of this statue was a work of almost incredible labor and skill, — the melting of such an immense mass of metal being attended with considerable danger, and necessitating the greatest care. During five successive days and nights it required constant stirring to avoid caking, which would have been certain destruction, and such was the intensity of the heat that at the moment of pouring the metal for the upper portion, the foundry roof took fire, — but with admirable presence of mind, the Inspector, Möller, preserved every man at his post until the casting was completed.

The sketch models made by Schwanthaler are still preserved in his studio at Munich, which remains exactly as it was in his lifetime. Unfortunately, he did not live to receive the congratulations of his countrymen upon the completion of this great work, nor did either of his friends and assistants. The statue was unveiled on the 9th of October, 1850, in the presence of the King of Bavaria, and an immense concourse of people, — a splendid procession of trades marking the chief portion of the pageant.

The royal foundry at Munich, at which the Bavaria was cast, is now perhaps the largest and most perfect of its kind in the world. Through a series of years large sums were expended by the late King, in adding to it every facility for executing works of colossal size, and a great number of the best statues, of both foreign and native sculptors, have been cast within its walls, — among others, Crawford's statue of Beethoven, in the Music Hall at Boston, and the Washington at Richmond, with its accessory statues, by the same artist.

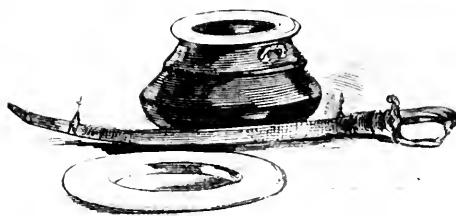
## MYLES STANDISH.

One of the most prominent individuals of the Pilgrim Band, the arm and shield of the infant colony, was Captain Myles Standish, a man whose iron nerve and dauntless courage contributed much towards carrying the Infant Society through the perils with which it was menaced. He was small of stature but sinewy and robust, with a constitution of iron, and an intrepidity of spirit, nurtured by a military education, which no danger could appal.

His family was one of the oldest in Lancashire, having flourished there from soon after the Conquest; and several of them had been distinguished for military spirit and prowess.

Myles Standish inherited in a pre-eminent degree the

*Myles Standish*



family talent, and being compelled to seek his fortune, chose the profession of arms, and served with the army sent by Queen Elizabeth to the assistance of the Dutch in their struggle against Spain. At Leyden he fell in with the Pilgrims, and was induced by the love of adventure, no less than an admiration of their principles, to join them in their emigration to America.

He was a passenger in the May-Flower, with his wife and daughter; the former of whom (Rose Standish) died during the first winter, and the latter (Lora Standish) before her father, as shown by the following extract from his will. "My will is, that out of my whole estate, my funeral charges to be taken out, and my body to be buried in a decent manner; and if I die in Duxbury, my body to be layed as near as convenient to my two dear daughters, Lora Standish, my daughter, and Mary Standish, my daughter-in-law."

At the time of the conspiracy between the Paomet and Massachusetts Indians to cut off the colonists, Captain Standish's promptitude and bravery in killing the leaders were probably the salvation of the settlement; and his name was ever afterwards a word of terror to the savages.

After the settlement, the neighborhood of Duxbury and Kingston was allotted to Captain Standish, John Alden, Jonathan Brewster, and Thomas Prentiss, and the Hill, now called Captain's Hill, with the adjacent lands, became the portion of Standish. Here he built his house, and set himself to repose; here too, in 1656, he died, at the age of seventy-two, but his burial-place is unknown.

His house was burned down while occupied by his eldest son, but the underpinning still remains to mark its site and form; and the old hearthstones with the blackened slabs, which formed the back of the fire-places, still stand in their places. The estate is now in the possession of James Hall, of Boston, who has collected quite a number of memorials of the original owner.

The good sword of Standish, and a kettle and dish said to have been his, are preserved in Pilgrim Hall, where is also an interesting memorial of Lora Standish, a well-wrought sampler, testifying to her piety as well as her skill in needlework.

## CAPTAIN'S HILL.

"We trace the mount, which gently soars  
Above the sea and circling shores,  
Where Standish, first of martial name,  
Who dauntless won heroic fame,  
Skilful and brave to guide the band  
Which firm achieved this chosen land,  
Was wont to gaze on every side,  
And scan the sail of every tide."

This beautiful mount is situated in the south-easterly part of Duxbury, and is visible at the right in the view of Plymouth on the Dollar Testimonial given to subscribers to the Monument Fund.



TIME OF MOON'S PHASES, AT

SOUTHING AND RISING OR SETTING OF  
THE PLANETS.

M. Week.	South.	Moon	Washington.			St. Louis & N. O.			San Francisco.			FIRST DAY.			SIXTEENTH DAY.		
			D. H. M.	D. H. M.	D. H. M.	Rises.	Sets.	Rises.	Rises.	Sets.	Rises.	H. M.	H. M.	Rises.	H. M.	Rises.	H. M.
C LAST QUAR.		7 5 57 E.	7 5 4 E.	7 2 55 E.	VENUS,	Rises 2 10 M.	Sths 8 58 M.					Rises 2 29 M.	Sths 8 58 M.				
● NEW MOON,		14 9 29 M.	14 8 30 M.	14 6 27 M.	MARS,	Sths 7 33 E.	Sets 10 5 M.					Sths 7 5 E.	Sets 11 58 E.				
D FIRST QUAR.,		21 9 2 M.	21 8 9 M.	21 6 0 M.	JUPITER,	Rises 1 52 M.	Sths 8 47 M.					Rises 1 6 M.	Sths 7 58 M.				
○ FULL MOON,		29 1 42 E.	29 0 49 E.	29 10 40 M.	SATURN,	Rises 3 6 M.	Sths 9 45 M.					Rises 2 15 M.	Sths 8 52 M.				

**Montreal.** **Boston.** **N. Y. City.** **Washington.** **Charleston.** **New York.**

D. Day of	Sun	Moon	SUN.			MOON			SUN.			MOON			SUN.		
			Rises.	Sets.	Rises.	Rises.	Sets.	Rises.	Rises.	Sets.	Rises.	Rises.	Sets.	Rises.	Rises.	Sets.	Rises.
1 Mo.	11 49	49 29 59 39	5 53	5 58 5 41	6 0	5 57 5 41	6 4	5 56 5 42	6 7	5 55 5 44	6 18						
2 Tu.	11 49	1 13 6 0 5 35	6 18	5 59 5 39	6 28	5 58 5 49	6 33	5 57 5 40	6 37	5 55 5 43	6 51						
3 W.	11 49	1 59 6 1 5 36	6 49	6 0 5 37	7	0 5 59 5 38	7	5 58 5 39	7 11	5 56 5 41	7 28						
4 Th.	11 49	2 48 6 3 5 34	7 28	6 1 5 36	7 41	6 0 5 36	7 47	5 59 5 37	7 53	5 57 5 40	8 12						
5 Fri.	11 48	3 40 6 4 5 32	8 17	6 2 5 34	8 31	6 1 5 35	8 87	6 0 5 36	8 44	5 57 5 39	9 4						
6 Sat.	11 48	4 35 6 5 5 30	9 17	6 3 5 32	9 30	6 2 5 33	9 36	6 1 5 34	9 43	5 58 5 37	10 2						
7 S.	11 48	5 30 6 6 5 28	10 25	6 4 5 30	10 36	6 3 5 32	10 42	6 2 5 33	10 47	5 59 5 36	11 4						
8 Mo.	11 47	6 26 6 8 5 26	11 46	5 5 29 11 49	6 45	30 11 53	6	3 5 31	11 58	5 59 5 33	morn						
9 Tu.	11 47	7 20 6 9 5 24	morn	6 6 5 27	morn	6 5 28	morn	6 4 5 29	morn	6 0 5 34	0 12						
10 W.	11 47	8 13 6 10 5 23	0 58	6 8 5 26	1 4	6 6 5 27	1 7	6 5 28	1 10	6 1 5 32	1 20	11	Mrs. Susanna Winslow d.				
11 Th.	11 47	9 5 6 12 5 21	2 17	6 9 5 24	2 21	6 7 5 25	2 23	6 6 5 27	2 25	6 2 5 31	2 30	12	Wid. Eliz. Warren d.	1673.			
12 Fri.	11 46	9 56 6 13 5 19	3 37	6 10 5 22	3 38	6 9 5 24	3 38	6 7 5 25	3 39	6 2 5 30	3 40	13	Capt. Standish d.	1656.			
12 Sat.	11 46	10 49 6 14 5 17	5	0 6 11 5 21	4 56	6 10 5 22	4 5 5 6	8 5 24	5 5 6	4 5 5 6	4 5 14	14	Selkirk left at Juan Fernandez.				
14 S.	11 46	11 43 6 16 5 15	sets	6 12 5 19	sets	6 11 5 21	sets	6 9 5 22	sets	6 4 5 28	sets	15	Walter Scott b.	1779. (1794)			
15 Mo.	11 46	even 6 17 5 14	5 25	6 13 5 18	5 31	6 12 5 19	5 38	6 10 5 21	5 43	6 5 25	6 5 26	16	Exhibition Harvard.				
16 Tu.	11 46	1 39 6 18 5 12	6	3 6 15 5 16	6 15	6 13 5 17	6 21	6 11 5 19	6 26	6 5 25	6 44	17	Battle of Saratoga.	1777.			
17 W.	11 45	2 40 6 20 5 10	6 5 22	6 16 5 14	7	5 6 14 5 16	7 11	6 12 5 18	7 18	6 5 24	7 31	17	Burgoyne surrend.	1777.			
18 Th.	11 45	3 40 6 21 5 9	7 49	6 17 5 13	8	3 6 15 5 14	8 9 6 13 5 17	8 16	6 7 5 23	8 37	18	Falmouth burnt.	1775.				
19 Fri.	11 45	4 37 6 22 5	7 8 55	6 18 5 11	9	7 6 16 5 13	9 13	6 14 5 15	9 19	6 8 5 22	9 33	19	Sur. of Cornwallis.	1781.			
20 Sat.	11 45	5 30 6 21 5 10	1 6 19 5 10	10 10 12 6 15 5	12 10	6 15 5 14	12 10 6 15 5	14 10 22	6 26	8 5 21	10 29	20	Winthrop chd.	Gov. 1620.			
21 S.	11 45	6 19 6 25 5 4 11	9 6 21 5	8 11 18 6 19 5	10 11	22 6 16 5	13 11 21 6	6 9 5 20	11 40	21	Discovery of America.	1492.					
22 Mo.	11 44	7 4 6 27 5 2	2 morn	6 22 5	7 morn	6 20 5	9 morn	6 17 5 11	morn	6 10 5 19	morn	22	Battle of Red Bank.	1777			
23 Tu.	11 44	7 47 6 28 5 0	0 16	6 23 5	5 0	2 22 6 21 5	7	0 25 6 18 5 10	0 28	6 11 5 18	0 33	23	Wm. Penn born.	1644.			
24 W.	11 44	8 27 6 29 4 59	5 19 1 19	6 24 5	4 1	2 23 6 22 5	6 1 25 6 19 5	9 1 27	6 12 5 16	1 34	24	British evac. R. I.	1779.				
25 Th.	11 44	9 7 6 31 4 57	2 23	6 25 5	2	2 24 6 23 5	5	2 25 6 20 5	7	2 25 6 13 5 15	2 28	24	Daniel Webster d.	1852.			
26 Fri.	11 44	9 47 6 32 4 55	3 24	6 27 5 1	3	2 23 6 24 5	3	3 23 6 24 5	6	3 22 6 13 5 11	3 22	24	James II. b.	1659. Wm. III. b.			
27 Sat.	11 44	10 28 6 34 4 54	4 27	6 28 5 0	4 24	6 24 5 25	2	4 22 6 23 5	5	4 21 6 14 5 13	4 17	25	Gov. Lincoln b.	17-2 (1640).			
28 S.	11 44	11 11 6 35 4 52	5 39	6 29 4 58	5 25	6 27 5	1	5 22 6 24 5	4	5 20 6 15 5 12	5 12	25	George II. died.	1760.			
29 Mo.	11 44	11 56 6 36 4 51	rises	6 30 4 57	rises	6 28 4 59	rises	6 25 5	2 rises	6 16 5 11	rises	26	Wm. Hogarth died.	1764.			
30 Tu.	11 44	morn 6 38 4 49	4 51	6 32 4 55	5	2 6 29 4 58	5 7 6 26 5	1 5 12	6 17 5 10	5 28	28	Gov. E. Winslow b.	1595.				
31 W.	11 44	0 45 6 29 4 48	5 29	6 33 4 54	5 41	6 30 4 57	5 47 6 27 5	0 5 53	6 18 5 9	6 11	30	Pres. J. Adams b.	1735.				

## STATUE OF FREDERIC THE GREAT.

The monument to the memory of Frederic the Great was inaugurated at Berlin, May 31st, 1851, — the principal part of the ceremony being performed by the King of Prussia in person. The work itself is a worthy tribute of a great nation's most illustrious monarch and general; and is by far the most magnificent monument of modern times.

It consists of a granite pedestal twenty-five feet in height, presenting in each face bronze groups of the great military commanders of the Seven Years' War, on foot and on horseback, all the size of life, and all portraits. The figures on horseback are the Duke of Brunswick, Prince Heinrich of Prussia, General Seydlitz, and General Zieten. The standing figures are those mentioned in the letters and despatches of the King as worthy of honorable record, and include nearly all the military celebrities of the kingdom. One of the faces of the pedestal contains three figures of Frederic's most eminent ministers; and portraits of Graun the composer, Lessing, and Kant.

The whole number of portraits life-size is thirty-one. In order to reproduce them correctly, the best authorities have been consulted, and authentic drawings, busts, and medals

of the period have been strictly followed. This has involved an immense amount of labor, but the value of the monument as an historical work, has been thereby infinitely increased. The costumes and arms of the time are given with equal accuracy, from the collections which were once preserved in perfect order in the arsenal, but which were injured or lost in the attack on the building in 1813.

Above the portraits are, at each angle, figures of Wisdom, Justice, Strength, and Moderation. Between these are bas-reliefs emblematic of different periods of the monarch's life.

The equestrian statue of the King is seventeen feet three inches high; it represents the monarch in his habit as he lived; and every detail of his dress and accessories is strictly given. Yet the figure is dignified and grand, while the horse is beautifully modelled, and the very ideal of a charger.

A simple inscription on the front face of the pedestal below the portrait statues, informs the beholder that the monument was commenced in 1810, by Frederic William, III.; and completed by Friedrich, IV., in 1851. The artist was Christian Rauch, the most eminent historical sculptor of Germany.

Plymouth, in honor of their venerated ancestors, Robert Cushman, the right hand of the Plymouth forefathers, and Elder Thomas Cushman, his son, who for about forty-three years acceptably served the church of the Pilgrims as Ruling Elder. On the following day the persons, assembled from almost every State in the Union, visited the grave of their ancestor, the Elder, and before parting resolved to erect an enduring monument over the remains of this venerable man. This object was subsequently consummated; and on the 15th of September, 1855, in commemoration of the sailing of the May-Flower from Plymouth, in England, for the new home in New England, the monument was consecrated with becoming exercises and ceremonies.

The Cushman monument stands in a conspicuous position within the ancient cemetery of the Plymouth fathers, upon Burying Hill, within sight of the hospitable harbor where the May-Flower lay safely moored in the inclemency winter of 1620; and also, of the far famed solitary rock of that sandy shore whereon the forefathers first set foot on the memorable twenty-first of December, and almost beneath the drippings of the first Christian sanctuary in New England.

The monument is a massive and tasteful structure, built of smoothly hewn Quincy granite, of the finest and most durable quality, and is highly creditable to the skill and faithfulness of Messrs. C. R. & C. Mitchell, the contractors. Its form is that of an obelisk with plainly chamfered edges, having a Grecian base standing upon an ornamental pedestal, also chamfered to its base, and containing sunken panels; the pedestal rests upon two square plinths, and the whole structure upon blocks of hewn granite occupying the whole space enclosed by a quadrangular fence, constructed with large stone posts and substantial iron rails. The whole height of the monument, including the stone blocks upon which it stands, is about twenty-seven and one-half feet; the base of the pedestal is about five feet square, and of the lowest plinth about eight feet. The space within the railing is about twelve feet square. The tablets, which contain the inscriptions in raised letters, occupy the four panels of the pedestal, and measure about thirty-six by twenty-two inches.



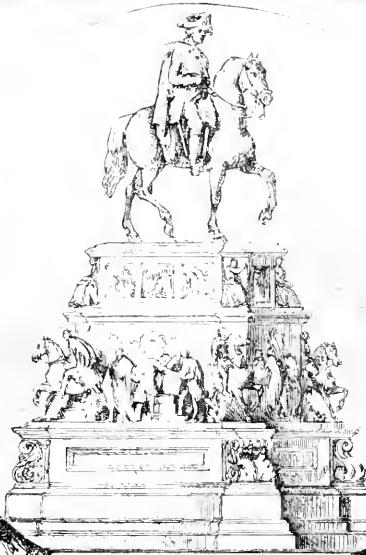
## CUSHMAN MONUMENT,

IN BURYING HILL CEMETERY, PLYMOUTH, MASS.

ERECTED A.D. 1858.

On the 15th of August, 1855, the descendants of the Cushman ancestors and their relatives, met together at

They are of metallic bronze, and were cast at the foundry of Messrs. Henry N. Hooper & Co., in Boston.



# NOVEMBER

TIME OF MOON'S PHASES, AT

SOUTHING AND RISING OR SETTING OF THE PLANETS.

C LAST QUAR.,	Washington.			St. Louis & X. O.			San Francisco.			FIRST DAY.			SIXTEENTH DAY.		
	D. H. M.	D. H. M.	D. H. M.	D. H. M.	D. H. M.	D. H. M.	H. M.	H. M.	H. M.	Rises	3 12 M.	S'ths	9 3 M.	H. M.	H. M.
● NEW MOON,	12 7 28 E.	12 6 35 E.	12 4 26 E.	MARS,			S'ths	6 33 E.	Sets 11 31 E.					Rises 3 22 M.	S'ths 9 9 M.
○ FIRST QUAR.,	20 3 44 M.	20 2 51 M.	20 0 42 M.	JUPITER,			Rises	0 14 M.	S'ths 7 4 M.					S'ths 6 15 E.	Sets 11 25 E.
○ FULL MOON,	28 6 30 M.	28 5 37 M.	28 3 28 M.	SATURN,			Rises	1 19 M.	S'ths 7 55 M.					Rises 11 23 E.	S'ths 6 11 M.
														Rises 0 26 M.	S'ths 7 0 M.
Montreal.			Boston.			N. Y. City.			Washington.			Charleston.			
British Provins., N. W. States and Territories, Washington Territory.			New England.			Penn., Ohio, Indiana, Illinois.			Cincinnati, St. Louis, Kansas, Southern Utah, San Francisco.			Gulf States, Texas, Arizona, San Diego.			
D. D. of M. Week.	Sun.	Moon.	Sun.	Moon.	Sun.	Sun.	Moon.	Sun.	Sun.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.
	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.	b. m.
1 Th.	11 44	1 37	6 41 4 45	6 15	6 34 1 53	6 28	6 31 4 56	6 34	6 28 4 59	6 41	6 15 5	9 7 0	1 19 5	8 55	7 56
2 Fri.	11 44	2 31	6 42 4 45	7 11	6 35 4 52	7 24	6 32 4 55	7 30	6 29 4 58	7 37	6 19 5	8 55	2 19 5	11 22	10 23
3 Sat.	11 44	3 26	6 43 4 43	8 13	6 37 4 50	8 28	6 34 4 53	8 34	6 30 4 57	8 40	6 20 5	7 57	3 19 5	12 22	11 23
4 S	11 44	4 21	6 45 4 42	9 28	6 38 4 49	9 35	6 35 4 52	9 43	6 31 4 56	9 48	6 21 5	6 10 2	4 19 5	13 22	12 23
5 Mo.	11 44	5 14	6 46 4 41	10 10	6 39 4 43	48 19	50 6 36 4 51	10 54	6 32 4 55	10 57	6 22 5	5 11 8	5 19 5	14 22	13 23
6 Th.	11 44	6 6	6 47 4 39	11 58	6 49 4 47	morn	6 37 4 50	morn	6 33 4 54	morn	6 23 5	4 morn	6 18 5	15 22	14 23
7 W.	11 44	6 56	6 49 4 38	morn	6 42 4 46	0	3 6 38 4 49	0	5 6 25 4 53	0	7 6 24 5	4 0 15	9 22 5	16 22	15 23
8 Th.	11 44	7 45	6 50 4 37	1 16	6 43 4 44	1 18	6 39 4 48	1 19	6 36 4 52	1 20	6 25 5	3 1 23 10	Spurzheim died, 1822.		
9 Fri.	11 44	8 36	6 52 4 36	2 24	6 44 4 42	2 23	6 31 4 47	2 23	6 37 4 51	2 23	6 26 5	2 2 21 31	Great Patent for N. E. 1620.		
10 Sat.	11 44	9 28	6 53 4 34	3 53	6 45 4 42	3 49	6 42 4 46	3 47	6 38 4 50	3 45	6 26 5	1 3 22 14	Chas. Carroll d. 1632. [1624.		
11 S	11 44	10 22	6 54 4 33	5 15	6 47 4 41	5 8	6 43 4 45	5 5	6 39 4 46	5 1	6 27 5	1 4 51 15	Com. House, Plym. burnt, 1605.		
12 Mo.	11 44	11 20	6 56 4 32	sets	6 48 4 40	sets	6 44 4 44	sets	6 40 4 48	sets	6 28 5	0 sets	Gunpowder plot, 1605.		
13 Tu.	11 47	even	6 57 4 31	3 38	6 49 4 39	4 51	6 45 4 43	4 57	6 41 4 47	5	6 20 5	0 5 22 16	Wm. Butten d. 1620. [1627.		
14 W.	11 45	1 21	6 59 4 30	5 33	6 50 4 38	5 46	6 46 4 42	5 52	6 42 4 47	5 59	6 30 4 59	6 19 16	Allerton's trade with Comp.		
15 Th.	11 45	2 22	7 0 42 9	6 33	6 52 4 38	6 49	6 48 4 42	6 55	6 43 4 46	7	1 6 31 4 58	7 21 18	Gr't earthquake. 1755. [1621.		
16 Fri.	11 45	3 18	7 1 42 8	7 45	6 53 4 37	7 56	6 49 4 41	8 1	6 45 4 45	8 7	6 32 4 58	8 25 19	Fortune arr. with Cushman, 1776.		
17 Sat.	11 45	4 10	7 3 42 7	8 54	6 54 4 36	9	3 6 50 4 40	9	7 6 46 4 44	9 12	6 33 4 57	9 27 20	Bat. Ft. Washington, 1776.		
18 S	11 45	4 58	7 4 42 10	2 6	5 54 4 35	10	9 6 51 4 39	10 12	6 47 4 44	10 16	6 34 4 57	10 27 21	Pilg. arr. at Cape Cod. 1620.		
19 Mo.	11 46	5 42	7 5 42 11	8	6 57 4 31	11 13	6 58 4 36	11 17	6 35 4 51	11 25 21	Social compact sign'd. 1620.				
20 Tu.	11 46	6 24	7 7 4 25 morn	6 58 4 34	morn	6 53 4 38	morn	6 49 4 42	morn	6 35 4 56	morn	23	Pres. Pierce born, 1804.		
21 W.	11 46	7	4 7 8 4 24	0 12	6 59 4 33	0 14	6 55 4 37	0 15	6 50 4 42	0 16	6 36 4 56	0 21	Gov. Gerry died, 1814.		
22 Th.	11 46	7 44	7 10 42 3	1 14	7 0 42	1 14	6 56 4 37	1 14	6 51 4 41	1 14	6 37 4 55	1 15	Landing at Cape Cod. 1620.		
23 Fri.	11 47	8 24	7 11 42 2	2 16	7 1 42 1	2 16	6 57 4 36	2 13	6 52 4 41	2 12	6 38 4 55	2 24	Pres. Taylor born, 1790.		
24 Sat.	11 47	9	6 7 12 4 22	3 20	7 3 42 1	3 15	6 58 4 36	3 13	6 53 4 41	3 11	6 39 4 55	3 4 25	Evac. of New York, 1783.		
25 S	11 47	9 51	7 13 4 21	4 24	7 4 42 1	4 17	6 59 4 35	4 14	6 54 4 40	4 10	6 40 4 55	4 1 27	Great earthquake, 1783.		
26 Mo.	11 48	10 39	7 15 4 20	5 30	7 5 40	5 21	7 0 4 35	5 17	6 55 4 40	5 12	6 41 4 54	5 49 27	Gov. Summer born, 1746.		
27 Tu.	11 48	11 31	7 16 4 20	2 12	7 6 40	7 6 40	7 1 4 35	7 14	6 34 4 38	6 42	6 42 4 51	7 28	Riot in Boston, 1747.		
28 W.	11 48	morn	7 17 4 19	4 11	7 7 4 29	4 21	7 3 4 34	4 30	6 57 4 39	4 37	6 43 4 51	4 50	Charles II. born, 1630.		
29 Th.	11 49	0 25	7 19 4 19	5 7 7	8 4 29	5 20	7 4 4 34	5 25	6 58 4 39	5 33	6 41 4 54	5 52	Prelim. of Peace, 1782.		
30 Fri.	11 49	1 21	7 20 4 18	6 11	7 9 4 20	6 23	7 5 4 33	6 29	6 59 4 38	6 35	6 44 4 54	6 52	St. Andrews.		

MEMORABILITY  
NOVEMBER.

## THE WASHINGTON MONUMENT AT RICHMOND.

To no man who ever lived has the world offered more unanimous and spontaneous homage than to George Washington,—nor has ever one existed to whom the reverence of the good, and the admiration of all, more justly belong. It was not inappropriate that his native State should occupy the foremost place in doing honor to him who conferred upon her an imperishable glory by the nobleness of his life,—and from the first Virginia took the lead in raising a tribute to his memory. During the lifetime of Washington, the State of Virginia invited the French sculptor, Houdon, to America, for the purpose of procuring from him an authentic statue of the Father of his Country. This work, in marble, is now in the capitol at Richmond, and a plaster cast taken from the statue itself, by leave of the Legislature of Virginia, stands in the vestibule of the Boston Athenaeum.

Numerous other monumental memorials of Washington exist in other places. Massachusetts has a statue, by the celebrated English sculptor, Sir Francis Chantrey, marked with the utmost dignity, and the face-beautifully expressive of the serene character which we ascribe to the Hero;—Greenough's colossal sitting statue is in the grounds of the National Capitol;—an equestrian statue by H. K. Brown, occupies a prominent position in Union Square, New York city;—Maryland has a monument at Baltimore;—and an immense pile has been commenced in Washington, and carried to the height of one hundred and seventy feet. Many others, of less importance, are scattered throughout the land; and if we take into account as votive offerings, —the tributes of a people to the memory of its greatest hero,—the immense number of portraits, from full-lengths to a mere head, which decorate, or are intended to decorate, the city halls, town halls, lyceum halls, of every State and every Territory in the Union, we shall be able to arrive at some estimate of the honor in which the memory of Washington is universally held, even without adding to the account the response which the nation has just given to the call upon its patriotism by the Ladies of the Mount Vernon Association.

Virginia, as has been mentioned, was the first State to commemorate by a statue the services of her son. About half a century after his death, her Legislature, conceiving that the statue by Houdon, however correct it might be as a mere portrait, was a very slight and unworthy memento of his excellencies, and far beneath such a monument as his native State should erect to him, commissioned Mr. Crawford to model an equestrian statue of colossal size, —to be placed on a pedestal surrounded by other statues of those distinguished men, natives of Virginia, who had labored with him in establishing our national independence. The statue of Washington was finished and inaugurated in 1856. It was modelled at Rome by Mr. Crawford, and cast at the great foundry at Munich. The statues of Jefferson and Patrick Henry were set at the same time;—the other statues, of Mason and General Lee, and the typical statues of Virginia and Liberty, were unfinished at the time of Mr. Crawford's decease, but are now being completed from his designs.

Washington is represented in full military costume, with his cocked hat upon his head;—all the accessories are minutely accurate. The action of the horse is spirited, and the attitude of the rider is manly and majestic. It is about twenty feet high. The pedestal upon which it stands is about the same height, oblong in form, with the ends curved; below are six smaller pedestals projecting in the form of a star upon the plan, upon which are to be placed the six statues named above, each of which is to be twelve feet high. In front, and forming each a buttress to the steps, which ascend between, are low plinths, upon which are to be bronze eagles. The height of the whole structure from the ground is about fifty feet.

## SOCIAL COMPACT OF THE FOREFATHERS.

On Saturday, the 21st of November, 1620, (the 11th, according to the old style of computing time,) the Pilgrim Fathers arrived at Cape Cod, in the May Flower, and anchored in Provincetown Harbor. Before making the usual arrangements for landing, they entered into a combination which served as the foundation of their government in their new home. This became necessary, as some of the

strangers who were with them had let fall discontented and mutinous speeches, threatening that they would use their own liberty when they came ashore, because none had power to command them on account of their patent being for Virginia and not for New England, where they happened to be. The agreement was drawn up and signed in the cabin of the May-Flower by the heads of families and such others as were considered of proper age, the act being held in their opinion as firm as any patent, and in some respects more so. The form of this instrument, generally known in history as the *SOCIAL COMPACT* or the *Forefathers*, is preserved in "Bradford's History of Plymouth Plantation," in the following words:

IS YE NAME OF GOD, AMEN. We whose names are under-written, the loyall subjects of our dread soveraigne Lord King James, by ye grace of God of Great Britaine, Frane & Ireland King, Defender of the Faith, &c.,

Having under-taken for ye glorie of God, and advancemente of ye Christian faith, and honour of our King & Countrey, a voyagie to plant ye first colonie in ye northerne parts of VIREGNA, doe by these presents solemnly & mutually in ye presence of God, and one of another, covenyant, & combine our selvs togeather into a civil body politick, for our better ordering & preservation, & furtherance of ye ends aforesaid; and by vertue hereof to enacte, constitute and frame such just & equal lawes, ordinances, acts, constitutions, & offices, from time to time, as shall be thought most meete & convenient for ye generall good of ye Colomie; unto which we promise all due submission and obedience.

In witness wherof we have hereunder subscribed our names at Cap-Codd y<sup>e</sup> 11 of November, in ye year of ye raigne of our soveraigne Lord King James of Englan, Frane & Ireland y<sup>e</sup> eighteenth, and of Scotland y<sup>e</sup> fiftie-fourth, An<sup>e</sup> Dom. 1620.

In alluding to this inimitable agreement, John Quincy Adams has aptly said in his admirable discourse, delivered at Plymouth in December, 1802, "This is perhaps the only instance in human history of that positive original social compact which speculative philosophers have imagined as the only legitimate source of government. Here was a unanimous and personal assent by all the individuals of the community, to the association by which they became a nation. It was the result of circumstances and discussions, which had occurred during their passage from Europe, and is a full demonstration that the nature of civil government, abstracted from the political institutions of their native country, had been an object of their serious meditation. The settlers of all the former European colonies had contented themselves with the powers conferred upon them by their respective charters, without looking beyond the seal of the royal parchment for the measure of their rights and the rule of their duties. The founders of Plymouth had been impelled by the peculiarities of their situation to examine the subject with deeper and more comprehensive research."

The names of the signers are not given in Gov. Bradford's manuscript, but are believed to have been essentially as follow, —

JOHN CARVER,	JOHN TURNER,
WILLIAM BRADFORD,	FRANCIS EATON,
EDWARD WINSLOW,	JAMES CHILTON,
WILLIAM BREWSTER,	JOHN CRACKSTON,
ISAAC ALLERTON,	JOHN DRAKINGTON,
MILES STANDISH,	MICHAEL FLETCHER,
JOHN ALDERMAN,	JOHN GOODMAN,
SAMUEL FULLER,	DIGORY PRIEST,
CHRISTOPHER MARTIN,	THOMAS WILLIAMS,
WILLIAM MULLENS,	GILBERT WINSLOW,
WILLIAM WHITE,	EDWARD MARGESON,
RICHARD WARREN,	PETER BROWN,
JOHN HOWLAND,	RICHARD BRITTERIGE,
STEPHEN Hopkins,	GEORGE SOLLE,
JOHN LEWIS,	RICHARD MARKE,
JOHN ALLERTON,	RICHARD GARDNER,
THOMAS ENGLISH,	JOHN CRACKSTON,
THOMAS TINKER,	THOMAS ENGLISH,
JOHN BIGDALE,	EDWARD DOFFEY,
EDWARD FULLER,	EDWARD LEISTER.

The first act under this constitution,—for such it was, to all intents and purposes,—was the election, on the day of its adoption, of John Carver to be the Governor of the new colony, an office to which he was re-elected in the following April, and which he held but for a very short time, as he died a few days after his last election.



# DECEMBER.

## TIME OF MOON'S PHASES, AT

## SOUTHING AND RISING OR SETTING OF THE PLANETS.

C LAST QUAR.	Washington.	St. Louis & N. O.	San Francisco.	FIRST DAY.		SIXTEENTH DAY.	
	D. H. M.	D. H. M.	D. H. M.	H. M.	H. M.	H. M.	H. M.
● NEW MOON,	5 0 53 E.	5 0 0 N.	5 9 51 M.	VENUS,	Rises 3 53 M. S'ths 9 18 M.	Rises 4 25 M. S'ths 9 29 M.	
D FIRST QUAR.	12 7 40 M.	12 6 47 M.	12 4 39 M.	MARS,	S'ths 5 53 E. Sets 11 18 E.	S'ths 5 31 E. Sets 11 10 E.	
○ FULL MOON,	20 1 2 M.	20 0 9 M.	19 10 0 E.	JUPITER,	Rises 10 28 E. S'ths 5 15 M.	Rises 9 30 E. S'ths 4 17 M.	
	27 10 9 E.	27 9 16 E.	27 7 7 E.	SATURN,	Rises 11 31 E. S'ths 6 4 M.	Rises 10 33 E. S'ths 5 6 M.	

## Montreal. Boston. N. Y. City. Washington. Charleston.

D. Day of M. Week.	Sun. Souths.	Moon. Rises.	SUN.		MOON.		SUN.		MOON.		SUN.		MOON.		SUN.		MOON.			
			Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.	Rises.	Sets.		
1 Sat	11 49	2 16 7 21 4 18	7 29	7 10 4 28	7 30	7 6 43 33	7 35	7	7 40	6 45 4 54	7 50									
2 Sun	11 50	3 11 7 22 4 18	8 34	7 11 4 28	8 42	7 7 43 33	8 46	7	1 43	8 50 6 46 4 53	9 1									
3 Mo.	11 50	4 3 7 23 4 17	9 48	7 13 4 28	9 54	7 8 43 33	9 56	7	2 43	9 59 6 47 4 53	10 7									
4 Tu.	11 51	4 58 7 24 4 17	11 11	4 7 14 4 27	11	7 7 49 33	11 8	7	3 43	10 10 6 48 4 53	11 14									
5 W.	11 51	5 42 7 25 4 17	17 10 11	7 15 4 27	10 4	7 10 43 33	11 20	7	4 43	10 19 6 49 4 54	11 20									
6 Th.	11 52	6 30 7 26 4 17	1 20	7 16 4 27	20	7 11 4 22	0 20	7	5 43	0 20 6 49 4 54	0 20									
7 Fri.	11 52	7 19 7 27 4 17	1 36	7 16 4 27	1 33	7 11 4 22	1 32	7	6 43	1 30 6 50 4 54	1 26									
8 Sat.	11 52	8 11 7 28 4 16	2 54	7 17 4 27	2 48	7 12 4 32	2 49	7	7 43	2 43 6 51 4 54	2 34									
9 Sun	11 52	9 5 7 29 4 16	4 14	7 18 4 27	4	7 13 4 32	2 4	1 7	8 43	3 57 6 51 4 54	3 44									
10 Mo.	11 53	10 3 7 30 4 16	5 32	7 19 4 27	5 21	7 14 4 32	5 16	7	8 43	5 10 6 52 4 54	4 54									
11 Tu.	11 54	11 3 7 31 4 17	sets	7 20 4 27	sets	7 15 4 33	sets	7	9 43	sets	6 53 4 54	sets								
12 W.	11 54	even 7 32 4 17	4 16	7 21 4 28	4 29	7 16 4 33	4 35	7	10 43	4 42 6 54 4 55	5 2									
13 Th.	11 55	1 3 7 33 4 17	5 23	7 22 4 28	5 35	7 16 4 33	5 41	7	11 43	5 47 6 54 4 55	6 5									
14 Fri.	11 55	1 58 7 33 4 17	6 24	7 22 4 28	6 44	7 17 4 33	6 49	7	11 43	6 54 6 55 4 55	7 10									
15 Sat.	11 56	2 49 7 34 4 17	7 44	7 23 4 28	7 52	7 18 4 34	7 56	7	12 43	8 0 6 56 4 55	8 13									
16 Sun	11 56	3 25 7 35 4 17	8 52	7 24 4 29	8 58	7 18 4 34	9 0	7 13 43	9 3 6 56 4 56	9 12										
17 Mo.	11 57	4 18 7 36 4 18	9 58	7 24 4 29	10 1	7 19 4 34	10 4	2 7	14 4 46	10 4 6 57 4 56	10 19									
18 Tu.	11 57	5 0 7 38 4 18	18 11	1 7 25 4 29	21 11	2 7 20 4 35	21 1	2 7	14 4 46	10 4 6 58 4 57	11 5									
19 W.	11 58	5 33 7 37 4 19	morn	7 26 4 30	morn	7 26 4 35	morn	7	15 4 41	morn	6 58 4 57	11 59								
20 Th.	11 58	6 19 7 37 4 19	0	7 26 4 30	0	2 7 21 4 35	0	1 7	15 4 41	0 1 6 59 4 58	morn	21								
21 Fri.	11 59	7 1 7 38 4 19	1	6 7 27 4 31	1	2 7 21 4 36	1	0 7	16 4 42	0 58 6 59 4 58	0 54	22								
22 Sat.	11 59	7 44 7 38 4 20	2	9 7 27 4 31	2	3 7 22 4 36	2	0 7	16 4 42	1 57 7	0 4 59	1	49	23						
23 Sun	0	8 30 7 34 4 21	3 15	7 28 4 32	3	6 7 22 4 37	3	2 7 17 4 43	2 58 7	0 4 59	2	46	24							
24 Mo.	0	9 20 7 39 4 21	4 21	7 28 4 32	4 10	7 23 4 38	4	5 7	17 4 43	4 0	7	1 5	0	3 45	24					
25 Tu.	0	1 10 14 7 40 4 22	5 26	7 29 4 33	5 14	7 23 4 38	5	8 7	18 4 44	5	2	7	1 5	0	4 45	25				
26 W.	0	1 11 10 7 40 4 23	6 28	7 29 4 34	6 15	7 24 4 39	6	9 7	18 4 45	6	2	7	1 5	1	5 44	26				
27 Th.	0	2 morn 7 40 4 23	rises	7 29 4 34	rises	7 24 4 40	rises	7	18 4 45	rises	7	2 5	2	rises	27					
28 Fri.	0	2 0 7 7 40 4 24	5 4	7 30 4 35	5 15	7 24 4 40	5 20	7 19 4 46	5 26	7	2 5	2	5 42	28						
29 Sat.	0	3 1 7 3 41 4 25	6 19 7 30 4 36	6 28 7 24 4 41	6 32	7 19 4 47	6 37	7	2 5	6 50	29			Rev. Dr. Cooper died, 1783.						
30 Sun	0	3 1 5 7 41 4 26	7 37 7 30 4 36	7 43 7 25 4 42	7 46	7 19 4 47	7 49 7	8 35	7 58 31	Mrs. Eliz. Howland d. 1687.										
31 Mo.	0	4 2 49 7 41 4 26	8 56	7 30 4 37	8 59	7 25 4 42	9 1	7 19 4 48	9 2 7	3 5	4	9 8 31	Richard Britterige d. 1620							

## THE AMERICAN METHOD OF TRANSIT.

THE "American Method of Transit" has excited no little interest in the scientific world.

This method depends on the mechanical resolution of the problem, which requires that *time* shall be converted into *space*,—in other language, that a *second of time* shall be made an *inch long*. Astronomers, as well as civilians, depend on the pendulum clock for the measure of time; and this instrument, perfected as it now is, by all the refinements of art, science, and skill, answers perfectly well to the ordinary demands of civil life, and even for the uses of the astronomer. It divides time into hours, minutes, and seconds, with approximate precision, but is wholly deficient when we demand the fractions of seconds, which astronomers are compelled to employ, down to the hundredths, and sometimes even to the thousandths.

To understand the new method of transits, and its advantages, we must present, in a few plain words, an outline of the old method of seizing the moment at which a star or other celestial body passed the meridian line of any place. A delicately illuminated spider's web, stretched across the field of view of the telescope, exactly north and south, and placed precisely in the plane of the meridian, presented to the eye of the astronomer a visible meridian line; and he had only to mark the moment at which the star, carried slowly across his field of view by the diurnal motion of the earth, was bisected by this delicate spider's web, in its passage. To do this was a simple operation to describe, not quite so simple to perform. The observer, lying in his chair, with his eye at the telescope, sees the star enter the field of view, he then casts his eye on the face of the clock, and noting the hour and minute, takes up the beat with the eye from the clock-face, and counts the seconds of time while he watches the approach of the star to his visible meridian, the delicately illuminated spider's web. Thus, while his ear listens to the clock-beat, and his mind keeps up the count of seconds, the star slowly advances, and at length passes the spider's web, or meridian-line. The observer finds that when the clock beat twenty seconds, for example, the star was to the right of the meridian-line; and when it beat twenty-one seconds, it was to the left of the same line. This interval passed over by the star in one second, held in the mind of the observer as well as he can, is now subdivided, in imagination, into ten equal parts, or tenths,—a part of which lie on the right, and the remainder on the left of the meridian-line. Thus, the star is noted to pass at 10h. 15m. 2sec, and three-tenths of a second, in which case three of these equal parts lie on the right, or before the star passes the meridian-line.

An observation thus accomplished is defective, because the observer is compelled to divide his attention among several diverse matters. He must keep up his count of the clock beat, and be sure he does not confound his audible count, one, two, three, &c., with the actual beat itself; again he must watch with the eye the star, to seize the moment of transit; he must hold in his mind as well as he can, the distance passed over in the critical second of like passage, and then estimate what fraction of this second passed before the transit. All these matters can only be imperfectly accomplished by the best of servers; and the heavy responsibility soon wears out the nervous system of the observer, and fixes a comparatively narrow limit to the time he can employ in successful observation. If it were possible in any way to cause the clock to keep an account of its own beats, by recording them automatically on some uniformly flowing time scale; and were it possible for the observer at the same time to record, mechanically, the *exact* moment of transit on the same time scale,—he would at once be released from the responsibility of counting clock beats, of estimating fractions of seconds, and of pencil entries in his note-book. To accomplish these grand desiderata is precisely the object of the "American method of transits," some account of which, as first used in the Cincinnati Observatory, will be given in this paper.

In the autumn of 1848, Prof. S. C. Walker, of the United States coast survey, was engaged with me, at

Cincinnati, in a series of observations, having for their object the determination of the difference of longitude, between the observatories of Philadelphia and Cincinnati. In comparing our clocks or chronometers, with those of Philadelphia, an observer at Philadelphia listening to the clock beat, touched the magnetic key of the telegraph wire, at every beat, and we received at Cincinnati, an audible *tick* every second of time, which was carefully noted, and thus our clocks were compared. There were two sources of error in this method of comparison, arising from an imperfect imitation of the clock beat by the Philadelphia operator, also from our noting the arrival of that beat in Cincinnati. On the 26th of October, 1848, Prof. Walker, while conversing on this subject, first presented to me the mechanical problem of causing the clock to send its own beats by telegraph, from one station to the other, or what amounted to the same thing, the problem of converting time into space as already explained. For, in case the clock could send its own beats by telegraph, and these beats could be received on a uniformly flowing time scale, the star transit could be also sent by telegraph, and received on the same scale; and thus a new method of transits would at once spring from the resolution of the first mechanical problem. I was informed by Prof. Walker that the problem had already been presented to others, but so far as he knew had never been solved. The full value of the idea was at once appreciated; and that night, before I slept, a common brass clock, the only one then in the observatory, was recording its own beats by the use of the electro magnet on Morse-fillett; and the following morning, Prof. Walker, on entering the transit-room, was presented with the first rough solution of his great problem for the conversion of time into space.

The problem once solved, there was now remaining nothing more than to elaborate such machinery as would render it possible to apply this new discovery or invention to the delicate and positive demands of astronomical observations.

I shall endeavor to render the subject intelligible to the general reader, by the use of simple language, freed as far as possible from the technicalities of science. It is well known that signals are transmitted along a line of telegraphic wire, by closing or by breaking the wire circuit, over which the electricity passes from pole to pole of the battery. The finger of the telegraphic operator, by touching the magnetic key, "breaks or makes" the circuit, until either interrupts or starts the flow of electricity. The problem of causing a clock to record its beats telegraphically, was then nothing more than to contrive some method whereby the clock might be made (by the use of some portion of its own machinery) to take the place of the finger of the living, intelligent operator, and "make" or "break" the electric circuit. The grand difficulty did not lie in causing the clock to play the part of an automaton in this precise particular; but it did lie in causing the clock to act automatically, and, at the same time, perform perfectly its great function as a time-keeper. This became a matter of great difficulty and delicacy; for, to tax any portion of the clock machinery with a duty beyond the ordinary and contemplated demands of the maker, seemed at once to involve the machine in imperfect and irregular action. After due reflection I chose to apply to the pendulum for a minute amount of power, whereby the making or breaking of the electric circuit might be accomplished with the greatest chance of escaping any injurious effect on the going of the clock. The principle which guided in this selection was, that we ought to go to the prime mover (which in this case was the clock weights, and which could not be employed), and failing to reach the prime mover, we should select the nearest piece of mechanism to it, which in the clock is the pendulum. A second point early determined by experiment and reflection, was this,—that the making or breaking of the circuit must be accomplished by the use of mercury, and not by a solid metallic connection. The method evolved, and based on these two principles, is the one which has been in use now for more than ten years in the Cincinnati Observatory, and so far as I know is the only successful one in use in the world.

The simplest possible method of causing the pendulum to "make" the circuit, may be described as follows:

Attach to the under surface of the clock pendulum, with gum shellac, a small bit of wire bent thus, — then right and left of the point, over which the pendulum vibrates when lowest, place two small globules of mercury, into each of which, there shall dip a wire from the poles of the battery. Now, as the pendulum swings over the globules of mercury, the two points of the attached wire will finally come, for one moment, to dip in the mercury cups, and thus make a momentary *bridge*, over which the current of electricity may pass from pole to pole. This method, among others, was tried at the Cincinnati Observatory, but was soon abandoned as uncertain and irregular in its results; and the following plan was adopted, which happens to be the first method ever tried, so far as my knowledge extends, —

A small cross of delicate wire was mounted on a short axis of the same material, passing through the point of union of the four arms constituting the cross. This axis was then placed horizontal on a metallic support, in Y.s, where it might vibrate, provided the top stem of the cross could be in some way attached to the pendulum of the clock, and the "cross" should thus rise and fall at its outer stem, as the pendulum swings backward and forward. The metallic frame bearing the "cross," also bore a small glass tube bent at right angles thus, — This was filled with mercury, and into one extremity one wire from the pole of the battery was made to dip, — the other wire was made fast by a binding screw to the metallic stand bearing the "cross;" and thus every time the "cross" dipped into the mercury in the bent tube, the electricity passed through the metallic frame, up the vertical standards bearing the axis of the cross, along the axis to the stem, and down the stem into the mercury, and finally through the mercury to the other pole of the battery. Thus at every swing of the pendulum the circuit was made, and a suitable apparatus might, by the electro-magnet, record each alternate second of time.

The amount of power required of the pendulum to give motion to the delicate wire cross was almost insensible, as the stems nearly counterpoised each other, in every position. Here, however, I met with a difficulty in procuring a fibre sufficiently minute and elastic to constitute the physical union between the top stem of the cross and the clock pendulum. Various materials were tried; among others a delicate human hair, the very finest that could be obtained, but this was too coarse and stiff. Its want of pliancy and elasticity gave to the minute "wire cross" an irregular motion, and caused it to rebound from the globe of mercury into which it should have plunged. After many fruitless efforts, an appeal was made to an artisan of wonderful dexterity, — the assistance of the *spider* was invoked; his web, perfectly elastic and perfectly pliable, was furnished, and this material connection between the wire cross and the clock pendulum proved to be exactly the thing required. Nothing has surprised me more than the infinite superiority of the manufactures of this despised insect over anything the boasted skill of man can produce. In proof of this remark, I need only state the fact that one single spider's web has fulfilled the delicate duty of moving the wire cross, lifting it, and again permitting it to dip into the mercury every second of time for a period of more than three years! How much longer it might have faithfully performed the same service, I know not, as it then became necessary to break this admirable bond, to make some changes in the clock. Here it will be seen, the same web has expanded and contracted each second during this whole period, and yet never, so far as could be observed, lost any portion of its elasticity. The clock was thus made to close the electric circuit in the most perfect manner; and inasmuch as the resistance opposed to the pendulum by the "wire cross" was a constant quantity and very minute, thus acting precisely as does the resistance of the atmosphere, the clock once regulated with the "cross" as a portion of its machinery, moved with its wonted steadiness and uniformity. Thus one grand point was gained. The clock was now ready to record its own beats automatically and with absolute certainty, without, in any way, affecting the regularity of its movement. It was early objected to the mercurial connection just described, that in a short time, the surface of the mercury would become oxidized, and thus refuse to transmit the current

of electricity, and this objection was even presented by Prof. Airy, the Astronomer Royal of England, in our early correspondence on this subject; but experiment demonstrated that the explosion produced by the electric discharge at every dip into the mercury threw off the oxide formed, and left the polished surface of the globe of mercury in a perfect state to receive the next passage of the electricity.

So far as I know, all other methods are now abandoned, and the mercurial connection is the only one in use.

#### THE TIME SCALE.

The clock being now prepared to record its beats, accurately and uniformly, the next important step was to obtain, if possible, a uniformly moving time-scale, which should be applicable to the practical demands of the astronomer.

In case the fillet of paper used in the Morse telegraph could have been made to flow at a uniform rate upon its surface, the clock could now record its beats, appearing as dots separated from each other by equal intervals. But it was soon seen that the paper could not be made to flow uniformly; and even had this been possible, a single night's work would demand for its record such a vast amount of paper, that this method was inapplicable to practice. After careful deliberation, the "revolving disk" was selected as the best possible surface on which the record of time and observation could be made. The preference was given to the disk over the cylinder for the following reasons: The uniform revolution of the disk could be more readily reached. The record on the disk was always under the eye in every part of it at the same time, while, on the revolving cylinder, a portion of the work was always invisible. One disk could be substituted for another with greater ease, and in a shorter time; and the measure of the fractions of seconds could be more rapidly and accurately performed on the disk than on the cylinder.

After much thought and experiment it was decided to adopt "a make circuit" and "a dotted scale" rather than a "break circuit" and a "linear scale;" and I think it will be seen hereafter that in this selection the choice has been fully justified in practice. These points being settled, the mechanical problems now presented for solution were the following: First, To invent some machinery which could give to a disk of say twenty inches diameter mounted on a vertical axis, a motion such that it should revolve uniformly once in each minute of time; and, Second, To connect with this disk the machinery which should enable the clock to record on the disk each alternate second of time, in the shape of a delicate round dot. Third, The apparatus which should enable the observer to record on the same disk the exact moment of the transit of a star across the meridian, or the occurrence of any other phenomenon.

The first of these problems was by far the most difficult, and indeed its perfect solution remains yet to be accomplished; though, for any practical astronomical purpose, the problem has been solved in more than one way.

The plan adopted in the Cincinnati Observatory may be described as follows: The clock-work machinery employed to give to the great Equatorial telescope a uniform motion equal to that of the earth's rotation, on its axis, offered to me the first obvious approximate solution of the problem under consideration. This machinery was accordingly applied to the motion of the disk, or rather to regulate the motion of revolution, this motion being produced by a descending weight after the fashion of an ordinary clock. It was soon discovered that the "Franckhofer clock" as this machine is called, was not competent to produce a motion of such uniformity as was now required. Several modifications were made with a positive gain; but after long study it was finally discovered that when the machinery was brought into perfect adjustment, the dynamical equilibrium obtained was an equilibrium of instability: that is, if from motion such as produced a revolution in one exact minute, it began to lose, this loss or decrement in velocity went on increasing, or if it commenced to gain, the increment went on increasing at each revolution of

the disk. Now all these delicate charges could be watched with the most perfect certainty; as, in case the disk revolved uniformly once a minute, then the seconds dots would fall in such manner (as we shall see directly), that the dots of the same recorded seconds would radiate from the centre of the disk in a straight line. Any deviation from this line would be marked with the utmost delicacy down to the thousandth of a second. By long and careful study, it was at length discovered, that to make any change in the velocity of the disk to increase or decrease quickly its motion, in short, to restore the dynamical equilibrium, the winding key of the "Framenhofer clock" was the point of the machinery where the extra or extremal helping force should be applied; and it was found that a person of ordinary intelligence stationed at the disk, and with his fingers on the key, could, whenever he noticed a slight deviation from uniformity, at once, by slight assistance restore the equilibrium, when the machine would perhaps continue its performance perfectly for several minutes, when again some slight acceleration or retardation might be required from the sentinel posted as an auxiliary.

The mechanical problem now demanding solution was very clearly announced. It was this: required to construct an automaton which should take the place of the intelligent sentinel, watch the going of the disk, and instantly correct any acceleration or retardation. This, in fact, is the great problem in all efforts to secure uniform motion of rotation. This problem was resolved theoretically in many ways, several of which methods were executed mechanically without success, as it was found that the machine stationed as a sentinel to regulate the going of the disk was too weak, and was itself carried off by its too powerful antagonist. The following method was, however, in the end entirely successful, and has now been in use many years at the Cincinnati Observatory, and is now about being adopted at several other institutions. Upon the axis of the Winding Key, already mentioned, a toothed wheel was attached, the gearing being so adjusted that one revolution of this wheel should produce a whole number of revolutions of the disk. The circumference of this wheel was cut into a certain number of notches, so that, as it revolved, one of these notches would reach the highest point once in two seconds of time. By means of an electro-magnet (to be hereafter described), a small cylinder, or roller, at the extremity of a lever arm, was made to fall into the highest notch of the toothed wheel at the end of every two seconds. Now, in case the disk was revolving exactly once a minute, the roller driven by the sidereal clock, by means of an electro-magnet, fell to the bottom of the notch, and performed no service whatever; but, in case the disk began to slacken its velocity, then the roller fell on the retreating inclined face of the notch, and thus urged forward by a minute amount the laggard disk, while, on the contrary, should the variation from a uniform velocity present itself in an acceleration, then the roller struck on the advancing face of the notch, and thus tended slowly to restore the equilibrium. Let it be remembered, that this delicate regulator has but a minute of service to perform. It must ever be on guard, and detecting, as it does instantly, any disposition to change, at once applies its restoring power, and thus preserves an exceedingly near approach to exact uniformity of revolution. This regulator operates through all the wheel-work, and thus accomplishes a restoration by minute increments or decrements spread over many minutes of time.

With a uniformly revolving disk, stationary in position, we should accomplish exactly, and very perfectly, the record of one minute of time, presenting on the recording surface thirty dots at equal angular intervals on the circumference of a circle. To receive the time dots of the next minute on a circle of larger diameter, required either that the recording pen should change position, or that at the end of each revolution the disk itself should move away from the pen by a small amount. We chose to remove the disk; but, in the new machinery now constructing, the pen will be made to move. To accomplish accurately the change of position of the disk at the end of each revolution, the entire machine was mounted on wheels on a small railway track, parallel with which a toothed plate was made fast, into whose notches a dog

fell in such manner the disk carriage could not move under the power of a descending weight over a pulley, until the dog was lifted.

The lifting of this dog automatically, and its instantaneous fall, so as to catch in the next notch, proved to be a mechanical problem of exceeding difficulty to execute practically. After many efforts, two dogs were finally adopted, the one short & by half an notch than the other. A movable cam was now placed on the under side of the revolving disk, which cam passed over levers operating the two dogs at every revolution, but in such manner that the dog holding the disk never let go until the loose dog had been passed by the cam, and was ready to take hold. Thus the dogs alternated in their action, and the tripping of the disk was accomplished with perfect regularity.

#### THE RECORDING PENS.

It now remains only to describe the simple machinery by which the clock records its beats, and the observer makes the record of his observation. These instruments are called the recording pens. That belonging to the clock is called the time pen—the one used by the observer, the observing pen. They are constructed and operate precisely in the following manner: A metallic arm is constructed with a short axis, perpendicular to its length. The extremities of this axis are pivots working in the jaws of a metallic frame, which supports the axis of the pen in a horizontal position. The longer arm of the pen reaches over into the center of the disk, and is armed at its extremity with a steel point, or stylus. Upon the long arm of the pen, and near the axis, is located a piece of soft iron denominated an armature; and beneath this armature an electro-magnet is firmly fixed. This magnet is placed on the circuit closed by the wire cross vibrating with the clock pendulum, and thus, at every dip of the cross into the mercury cup, the armature of the pen is suddenly drawn down on the head of the magnet, and the moment the circuit is broken, a spring acting on the short arm of the pen lifts it from the head of the magnet. It is readily seen that in this way the stylus is brought down by a sudden shock, or blow, on the material placed on the revolving disk to receive the record. The pen is so adjusted, that, in case the armature be simply placed and held by hand on the head of the magnet, the steel point of the stylus does not quite touch the recording surface on the disk. The elasticity of the long arm of the pen is, therefore, a matter of the greatest moment, for this elasticity causes the pen to make a simple dot, by a sudden blow and recoil; whereas, were the pen non-elastic, there would be a drag for the time during which the magnet holds the pen, which would at once destroy the uniformity in the going of the disk. This simple matter gave to Prof. Airy no small amount of trouble, before he learned how to overcome it by the elasticity of the pen handle.

A pen constructed in precisely the same way, and placed at right angles to the former, so that the points of the two pens fall in close proximity on the disk, is operated by a magnet made by a circuit closed at will by the finger of the observer; and thus he is enabled to throw down upon the time scale a dot, which, falling between some two-second dots on the disk, records the exact instant of any phenomenon under observation.

When the disk is filled, we have only to lift it from its socket and replace it with a new disk. These disks are formed by pasting common book paper on a hoop closely fitting the circumference of the disk, the paper being moistened down with a sponge; when dry the surface is smooth and drumhead-like, and is admirably adapted to receive the record. To read the time scale it is only necessary to mark on the disk from the clock face the time denoted by any one dot; for example, 12 h. 15 m. 00 s. The circle next outside will be 12 h. 16 m., the next circle 12 h. 17 m. &c.; while the first or marked radius of dots will be the 0 second of all the minutes, the next in order will be the second, the next the fourth, and so on to the 58 and 0 second again. Thus we read the scale as rapidly as we read a clock face, for the hour, minute, and second; and it only remains to construct a machine for measuring the fractions of seconds.

## THE ANGULAR TIME MICROMETER.

This instrument is very simple. Take a common carpenter's two-foot rule; cut away the inner portion of one of the legs for two-thirds of its length, and insert a piece of plane glass; draw from the centre of the joint, with a diamond point on the under surface of this glass, a delicate straight line, and blacken by rubbing in black lead pencil. The arms of this micrometer are a little longer than the radius of the disk. To the left hand arm, at its outer extremity, attach a small brass arc, divided into seconds and tenths, and make it say  $2\frac{1}{2}$  seconds in length. When the two legs are closed, the black line on the glass will read 0 on this scale of seconds. At the joint, drill a small hole, and at the centre of the disk to be measured, erect a small vertical pin to fit this hole. Lay the instrument on the disk, the pin being inserted in the hole, and you are ready to measure your fractions of seconds with any degree of precision.

We have thus closed a rapid description of the machinery employed at the Cincinnati Observatory. This machinery was perfected and brought into action in the early part of the year 1849, having been invented on the 26th of October, 1848. On the 1st of September, 1849, a metallic plate was prepared and placed on the revolving disk to receive the record. A series of observations were made and recorded on this type metal plate, by the steel pens; and an engraving was thus made from which a large number of prints were taken, and sent to the principal astronomers of the United States and of Europe. I am not aware that any observations were ever made or published by the American method anterior to these.

By this new method of observation, all necessity for counting the clock is avoided. The observer is released from every responsibility, except simply to keep his eye on the star under observation. At the moment the star is bisected by the meridian wire, he touches his magnetic key, and the record is made.

The astronomer is thus enabled to multiply almost indefinitely, the number of "wires" on which he shall observe. By the old method, a rapid and skillful observer could note the passage over seven wires; while, by the new, he is prepared to mark the transit over twenty-five, or even fifty, should the occasion demand any such extension.

The limits assigned to this article will not permit any account of the various adjustments requisite in the use of the new machinery; neither can we do more than enumerate the many direct and collateral investigations which have engaged our attention at the Cincinnati Observatory.

All possible sources of error have been critically studied and examined, and the limits to the errors due to each source have been determined, — such as failure in the pens to respond; want of uniformity in the motion of the disk; failure of the angular micrometer; change of figure of the disk; change in the adjustment of the pens; and the entire subject of *personality*, involving, —

### 1. Personal error of observation.

### 2. Personal peculiarity in measuring.

3. Personal equation, or the time required to effect the record of any phenomenon perceived by the sense

of sight or hearing. This is a subject of great difficulty, and of great importance in practical astronomy. To render it intelligible, suppose two observers were watching the reappearance of a star from behind the dark limb of the moon. Holding a magnetic key, by whose touch each could record the exact moment of the appearance of the star, it is found that no two observers would agree in their record, — not on account of personal error (for this could be obviated by say one hundred observations), but because the sense of sight, the action of the will, and the obedience of the nerves, are all positively different in different individuals. A thorough investigation of the action of the senses of sight, hearing, and touch, have been made, requiring the division of time, down to the thousandth of a second, and also the determination of the amount of time required to make a magnet after the electric current commences to flow. This is denominated *armature time*, and is measured in a very simple manner, requiring but a single minute for the operation.

The increased accuracy reached in A. R., by the new method, has given rise to new and refined methods of measuring all the instrumental errors — as well as the errors of the clock. To determine whether a clock runs uniformly, from five minutes to five minutes, or even for one single minute of time, is a matter of great difficulty, and could never have been accomplished, but for the conversion of time into space.

These refinements in the determination of astronomical right ascension have led naturally to the inquiry, whether it be not possible to make a like advance in the measurement of north polar distance. This subject has been under examination at the Cincinnati Observatory, and an entire new system has been in use there for four years, which, combined with the American method of transits, makes it possible to catalogue the places of the stars with such delicacy and rapidity that it is now possible to condense the labor of a century into ten years, or to increase the effective life of the astronomer ten-fold.

## ECLIPSES FOR THE YEAR 1860.

In the year 1860 there will be four Eclipses, two of the Sun and two of the Moon.

I. An annular eclipse of the Sun, January 22, invisible in the United States. It will be visible in the Great Southern Ocean between South America and Australia.

II. A partial eclipse of the Moon, February 6, visible in the United States. The annexed table exhibits the times of its phases for the three following meridians: —

Eclipse begins. Mid. of Ecl. Eclipse ends.

Washington time,..... 7h. 55m. eve. 9h. 21m. eve. 10h. 48m. eve  
St. Louis and N. O. time, 7h. 25m. " 8h. 25m. " 9h. 55m. "

San Francisco time,..... 4h. 53m. " 6h. 19m. " 7h. 46m. "

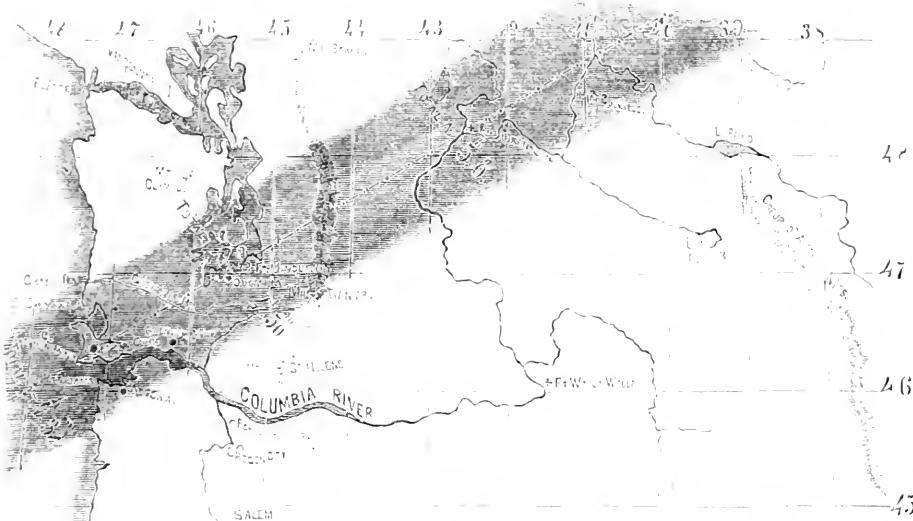
The eclipse will be on the north side of the Moon, and the shadow will obscure about four-fifths of its diameter.

III. A total eclipse of the Sun on the morning of July 18, visible either as a total or partial one throughout the United States, British America, the North Atlantic Ocean, Europe, the greater part of Africa, and a portion of Asia.

Below we give the times of beginning and ending of the eclipse for one or more places in each State of the Union.

Name of Place.	Eclipse begins.	Mid. of Eclipse.	Eclipse ends.	Angle N to W of Beg.	Name of Place.	Eclipse begins.	Mid. of Eclipse.	Eclipse ends.	Angle N to W of Beg.	Name of Place.	Eclipse begins.	Mid. of Eclipse.	Eclipse ends.	Angle N to W of Beg.
Quebec, C. E.	7 24	8 30	9 35	54	Wilmington, Del.	7 4	8 2	9 0	44	Dubuque, Ia.	7 37	8 1	8 52	58
Montreal, C. E.	7 12	8 17	9 31	53	Montgomery, Md.	6 35	7 55	8 53	43	St. Paul, Minn.	5 46	6 47	7 44	63
Toronto, C. E.	6 45	7 46	8 48	51	Washington, D. C.	6 36	7 56	8 56	42	Madison, Wis.	6 1	7 0	7 58	58
Halifax, N. S.	8 0	9	10 15	50	Charlottesville, Va.	6 49	7 50	8 41	43	Milwaukee, Wis.	6 1	7 6	8 4	57
S. John. I.	7 59	8 57	10 3	51	Richmond, Va.	6 34	7 50	8 45	41	Detroit, Mich.	6 28	7 28	8 27	33
Eastern, Me.	7 44	8 51	9 37	50	Norfolk, Va.	7 1	7 55	8 49	40	Ann Arbor, Mich.	6 25	7 25	8 24	51
Bangor, Me.	7 33	8 42	9 47	49	Raleigh, N. C.	6 30	7 44	8 32	37	Cincinnati, O.	6 21	7 17	8 13	48
Augusta, Me.	7 31	8 36	9 41	49	Wilmington, N. C.	6 33	7 45	8 33	34	Columbus, O.	6 28	7 25	8 22	49
Portland, Me.	7 28	8 32	9 36	49	Columbia, S. C.	6 40	7 52	8 17	32	Indianapolis, Ind.	6 14	7 11	8 8	51
Concord, N. H.	7 24	8 25	9 28	49	Charleston, S. C.	6 46	7 53	8 19	32	Chicago, Ill.	6 8	7	8 6	56
Montpelier, Vt.	7 17	8 21	9 25	50	Savannah, Ga.	6 44	7 57	8 12	33	Springfield, Ill.	5 30	6 50	7 52	55
Boston, Mass.	7 24	8 27	9 30	48	Augusta, Ga.	6 36	7 22	8 11	31	Montgomery, Ala.	5 1	6 53	8 48	52
Lowell, Mass.	7 23	8 20	9 23	48	Tallahassee, Fla.	6 29	7 47	8 4	34	Louisville, Ky.	6 17	7 12	8 6	48
Springfield, Mass.	7 17	8 19	9 21	48	Tuscaloosa, Fla.	6 27	7 45	8 25	35	Frankfort, Ky.	6 20	7 15	8 10	47
Providence, R. I.	7 29	8 24	9 23	46	Mobile, Ala.	6 8	7 59	8 44	31	Shelbyville, Ky.	6 18	7 13	8	47
Hartford, Ct.	7 16	8 21	9 26	46	Montgomery, Ala.	6 15	7 2	7 45	42	Nashville, Tenn.	6 11	7 4	7 56	41
New Haven.	7 15	8 17	9 18	46	Jackson, Miss.	5 57	6 45	7 32	49	Knoxville, Tenn.	6 25	7 17	8 9	41
New York, N. Y.	7 10	8 10	9 10	45	N. Orleans, La.	6 0	6 43	7 25	40	Olympia, W. T.	4 48	5 42		
Albany.	7 11	8 12	9 13	49	Galveston, Tex.	5 36	6 21	7 5	37	Portland, Oregon	4 47	5 39		
Rochester.	6 52	7 54	8 35	50	San Antonio, Tex.	5 21	6	6 50	34	Corvallis, Oregon	5 76	6 57		
Buffalo.	6 47	7 49	8 30	51	Little Rock, Ark.	5 48	6 58	7 75	46	S. Francisco, Cal.	4 47	5 32		
Trenton, N. J.	7 7	8 6	9 5	45	St. Louis, Mo.	5 56	6 43	7 25	33	Sacramento, Cal.	5 52	6 37		
Philadelphia, Pa.	7 4	8 3	9 2	45	Jefferson City.	5 45	6 43	7 25	33	San Diego, Cal.	5 13	5 45		
Harrisburg, Pa.	6 56	7 35	8 54	46	Lawrence, K. T.	5 35	6 29	7 25	32	San Lake City, U. S.	5 13	6 16		
Pittsburg, Pa.	6 42	7 40	8 58	44	Des Moines, Ia.	5 42	6 30	7 35	38	Eclipt. d.				

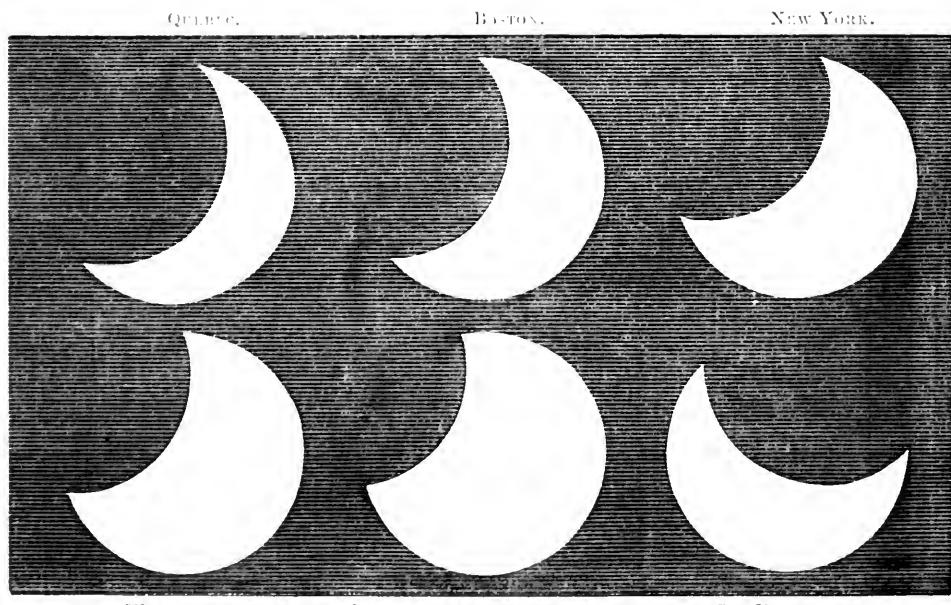
MAP OF WASHINGTON TERRITORY, EXHIBITING THE PATH OF THE TOTAL ECLIPSE OF JULY 18, 1860.



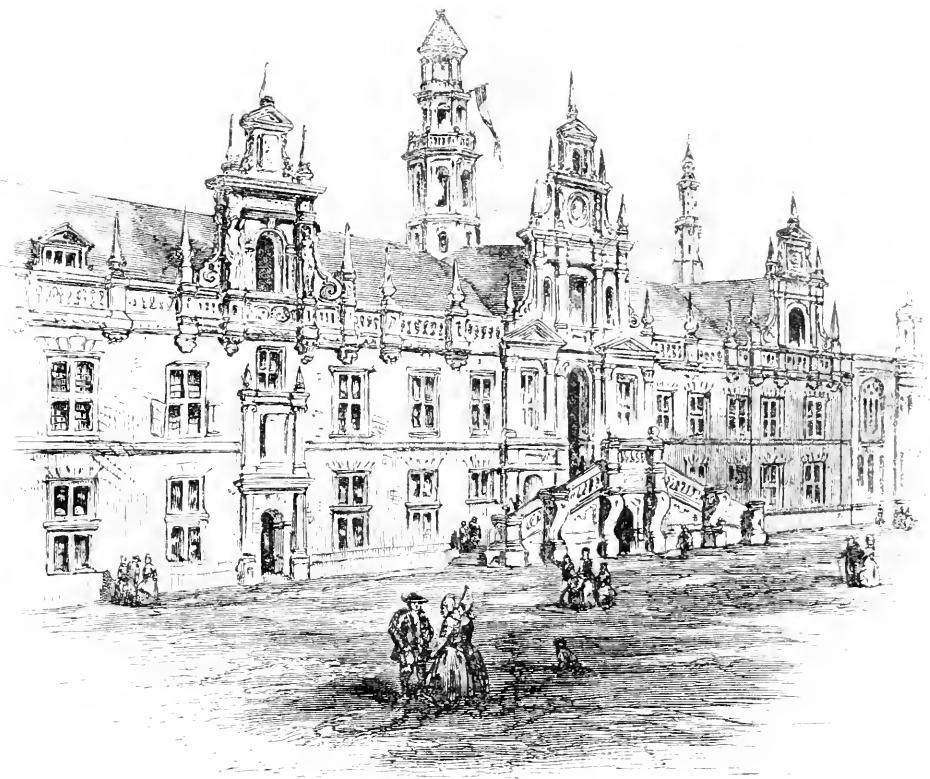
The dark shadow, or *total* phase, will first strike the earth in the Pacific Ocean off the mouth of Columbia River. It will cross Washington Territory in a direction nearly E. N. E. (as on the map above), pass through Hudson's Bay, and at the mouth of Davis' Strait will very nearly attain the latitude of  $60^{\circ}$ . As it crosses the Atlantic its course will incline to the South, striking the coast of Spain on the southern side of the Bay of Biscay, near

Santander, crossing Spain in a S. E. direction, along the valley of the Ebro, and passing over the islands of Iвica and Majorca, it will strike the coast of Africa in Algeria, pass over Tripoli, Sockna, Mourzook, and Dongola, and finally leave the earth in Nubia near the Red Sea. In all the States east of the Rocky Mountains the eclipse will begin on the upper limb near the highest point.

APPEARANCE OF THE SUN AT THE TIME OF GREATEST OBSCURATION AT SEVERAL PLACES. ECLIPSE OF JULY 18, 1860.



IV. A partial eclipse of the Moon, August 1, invisible in every part of the United States.



#### TOWN HALL, LEYDEN.

The Pilgrims are supposed to have removed to Leyden about the year 1608. It was at this time one of the most wealthy and prosperous cities of Europe, being second in Holland only to Amsterdam.

In 1573-4 it had suffered one of the most memorable sieges on record; its inhabitants had been reduced to the very verge of starvation and despair; and the city was saved from the Spaniards by breaking down the dykes and flooding the land with the sea. After the pacification of Ghent, in 1576, it began rapidly to recover its prosperity; and during the residence of the Pilgrims, it had so increased in population that it became necessary to enlarge its boundaries.

The Town Hall, of which a view is given above, is the chief edifice besides the churches; it was built at an early period, but the exact date is unknown; and in 1481, it blew up, causing the death of thirty-six persons. After

having been rebuilt it was remodelled in 1597. The interior contains an immense hall, hung with portraits and historical pictures.

In the pavement at the top of the stone staircase is the inscription "Niet sonder God" (Not without God); and another inscription above the door asks his blessing on Holland and Leyden: (Lord, save Holland, and bless Leyden!) and a singular acrostic of one hundred and twenty-nine letters, answering to the number of days of the great siege, which lasted from May 26th to October 3d. Among the pictures in the Council Chamber are several relating to the siege; and a very curious Last Judgment by the scholars of Lucas van Leyden. From the bell-tower is obtained a fine panoramic view of the city and its environs, stretching to the westward beyond Delfthaven and the Hague.

#### HIGH TIDES, 1860.

In the following pages we give the times of high water at the ports of Boston, New York, Baltimore, Charleston and San Francisco. They have all been calculated from the latest data of the Coast Survey.

For the Atlantic ports we only give the time of the first tide which occurs after 6 o'clock in the morning of each day. The night tide will occur about 25 minutes later than the time which corresponds to that of the succeeding day tide.

At San Francisco the tides are extremely irregular, we have therefore given the time of every high water. The

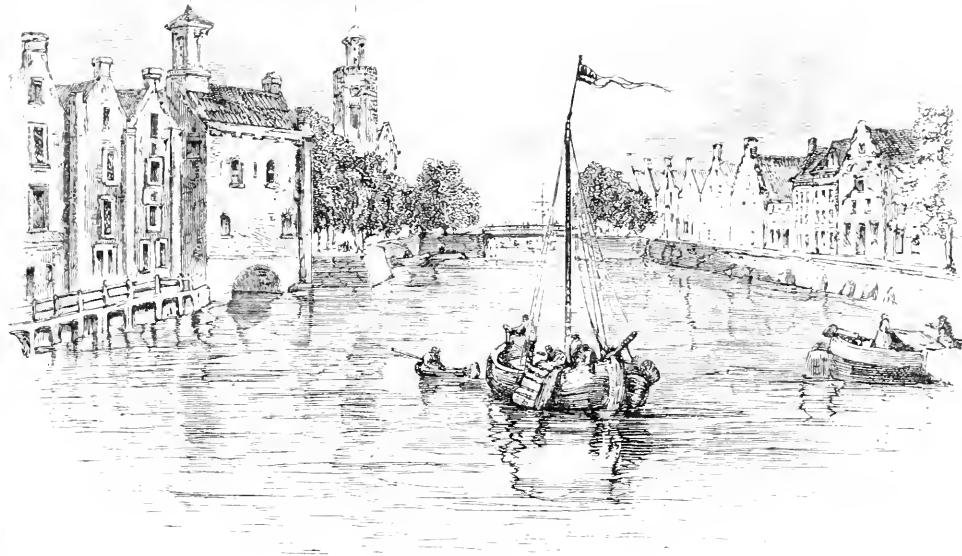
two tides which occur in the course of the twenty-four hours, generally differ very much in their height; the higher, or "large tides" of each day are distinguished by the letter L, the smaller by S. Where neither letter is printed, the tides are nearly of the same height. Sometimes two tides occur during the same morning, and none at all during the afternoon, or vice versa. In this case one of the morning tides has to be transferred to the afternoon column, or vice versa; and to avoid confusion, an explanation is in each case given in a note.

See Tide Tables on pages 34 and 36.

Boston, N. York.		Balt.		Charles-		San Francisco.		Boston, N. York.		Balt.		Charles-		San Francisco.	
				ton	ton	ton	ton					ton	ton	ton	ton
Jan.	1	5	26m	1	48pm	0	8pm	0	51pm	5	446	5	568	5	568
2	5	27m	2	3pm	0	55pm	1	36pm	6	153	7	48	2	825	
3	6	18m	3	32pm	1	55pm	2	35pm	6	136	8	243	3	229	
4	7	18m	4	35pm	2	55pm	3	49pm	7	333	9	333	4	144	
5	8	22m	5	3pm	3	58pm	4	42pm	8	173	10	475	5	11	
6	9	22m	6	3pm	4	59pm	5	51pm	9	241	11	322	6	11	
7	10	23m	7	10pm	6	6pm	6	26pm	9	255	12	322	7	9	
8	11	23m	8	5pm	6	3pm	7	24pm	9	328	10	541	8	1	
9	12	23m	8	59pm	7	24pm	8	45pm	1	38	11	503	9	2	
10	13	23m	9	50pm	8	11pm	9	2pm	2	298	0	473	10	3	
11	14	23m	10	1pm	8	57pm	9	47pm	2	568	1	463	11	3	
12	2	2pm	11	2pm	9	41pm	10	31pm	3	26	2	53	12	4	
13	3	2pm	1	3pm	10	28pm	11	17pm	3	31	4	31	13	5	
14	4	1pm	1	4pm	11	16pm	0	4pm	4	226	5	58	14	6	
15	5	6pm	1	5pm	0	14pm	0	5pm	5	81	6	203	15	7	
16	6	6pm	2	52pm	1	15pm	1	51pm	6	101	7	508	16	8	
17	6	9pm	3	37pm	2	1pm	2	59pm	6	156	9	58	17	9	
18	7	32pm	1	17pm	3	2pm	4	7pm	7	31	10	468	18	9	
19	8	17pm	5	38pm	4	29pm	5	41pm	8	211	11	208	19	10	
20	9	41pm	6	27pm	5	11pm	6	7pm	9	284	12	301	20	11	
21	10	34pm	7	15pm	6	1pm	6	32pm	0	18	10	160	21	12	
22	11	15pm	8	0pm	6	23pm	7	18pm	0	358	11	507	22	13	
23	11	57pm	8	41pm	7	5pm	7	57pm	1	38	11	583	23	14	
24	12	52pm	9	2pm	7	42pm	8	31pm	1	318	9	506	24	15	
25	13	5pm	9	56pm	8	16pm	9	5pm	1	351	10	436	25	16	
26	14	1pm	10	12pm	8	1pm	9	39pm	2	18	2	56	26	17	
27	15	2pm	11	1pm	9	23pm	10	13pm	2	42	2	39	27	18	
28	16	2pm	11	1pm	9	23pm	10	13pm	3	216	3	118	28	19	
29	17	3pm	11	2pm	9	5pm	10	48pm	3	216	3	118	29	20	
30	18	3pm	11	2pm	9	5pm	10	48pm	3	216	3	118	30	21	
31	19	3pm	11	2pm	9	5pm	10	48pm	3	216	3	118	31	22	
Feb.	1	6	12pm	1	5pm	11	22pm	0	11pm	1	336	5	526	1	163
2	6	15pm	2	59pm	1	2pm	2	0pm	6	91	8	56	2	52	
3	7	58pm	3	1pm	4	29pm	7	51pm	10	418	2	31pm	3	11pm	
4	9	7pm	6	25pm	4	43pm	8	4pm	11	388	5	11	4	41pm	
5	10	11pm	6	35pm	5	42pm	6	8pm	9	434	.....	.....	5	11pm	
6	11	8pm	7	45pm	6	10pm	7	43pm	0	288	10	384	6	11pm	
7	11	55pm	8	38pm	7	3pm	7	55pm	1	28	11	335	7	12pm	
8	9	43pm	9	27pm	5	4pm	8	41pm	1	453	9	343	8	1pm	
9	1	23pm	10	12pm	8	32pm	9	22pm	2	21	1	35	9	12pm	
10	2	1pm	10	52pm	9	14pm	10	6pm	2	59	2	21	10	2pm	
11	2	5pm	11	4pm	10	1pm	10	56pm	3	21	3	35	11	3pm	
12	3	8pm	10	31pm	10	38pm	4	31	3	56	10	384	12	4pm	
13	4	1pm	11	25pm	11	46pm	0	32pm	3	461	6	238	13	5pm	
14	5	8pm	2	31pm	1	31pm	5	42pm	7	428	4	22pm	14	6pm	
15	6	18pm	3	36pm	1	56pm	2	39pm	5	281	9	448	15	7pm	
16	7	22pm	4	4pm	3	1pm	3	38pm	7	226	10	37pm	16	8pm	
17	8	23pm	5	4pm	4	0pm	4	50pm	8	121	10	538	17	9pm	
18	9	20pm	6	6pm	1	4pm	5	41pm	9	36	11	335	18	10pm	
19	10	5pm	6	52pm	5	2pm	6	58pm	9	58	11	588	19	11pm	
20	11	5pm	7	23pm	6	5pm	10	50pm	1	436	11	335	20	12pm	
21	11	26pm	8	8pm	6	35pm	7	27pm	0	268	11	335	21	1pm	
22	12	5pm	8	38pm	7	3pm	7	55pm	1	28	11	335	22	2pm	
23	13	5pm	9	27pm	5	4pm	8	41pm	1	453	9	343	23	3pm	
24	14	1pm	9	54pm	5	15pm	1	31pm	2	568	10	33pm	24	4pm	
25	1	42pm	10	26pm	5	18pm	9	38pm	2	16	1	588	25	5pm	
26	2	29pm	11	4pm	10	16pm	9	25pm	2	568	11	322	26	6pm	
27	3	2pm	11	4pm	10	15pm	9	25pm	2	568	11	322	27	7pm	
28	4	3pm	10	31pm	9	1pm	3	31pm	3	316	10	31pm	28	8pm	
29	5	4pm	10	31pm	9	1pm	4	31pm	3	316	10	31pm	29	9pm	
30	6	5pm	10	31pm	9	1pm	5	41pm	3	316	10	31pm	30	10pm	
Mar.	1	5	52pm	2	3pm	10	31pm	5	1pm	5	161	7	588	1	1pm
2	6	1pm	10	31pm	5	1pm	6	1pm	5	161	7	588	2	2pm	
3	7	41pm	5	9pm	2	12pm	5	1pm	7	351	11	278	3	3pm	
4	8	50pm	6	6pm	3	23pm	5	1pm	8	461	11	208	4	4pm	
5	9	50pm	6	3pm	5	21pm	6	15pm	9	446	11	538	5	5pm	
6	10	43pm	7	27pm	6	12pm	6	3pm	10	436	11	314	6	6pm	
7	11	23pm	8	13pm	6	37pm	7	3pm	0	418	9	214	7	7pm	
8	0	15pm	8	57pm	7	22pm	13	1pm	0	217	9	214	8	8pm	
9	0	5pm	9	44pm	8	4pm	8	55pm	2	16	1	288	9	9pm	
10	1	43pm	10	27pm	8	4pm	9	23pm	1	556	2	236	10	10pm	
11	2	32pm	11	1pm	9	35pm	10	27pm	2	191	3	358	11	11pm	
12	3	24pm	9	9pm	10	27pm	11	15pm	2	541	5	68	12	12pm	
13	4	29pm	10	15pm	11	25pm	0	13pm	3	151	6	238	13	2pm	
14	5	23pm	2	7pm	9	29pm	1	10pm	4	471	5	148	14	3pm	
15	6	25pm	3	1pm	1	3pm	5	1pm	4	471	5	148	15	4pm	
16	7	9pm	4	1pm	2	3pm	3	1pm	5	561	9	378	16	5pm	
17	7	58pm	5	9pm	3	1pm	4	1pm	7	571	11	148	17	6pm	
18	8	1pm	5	58pm	5	10pm	8	59pm	11	153	17	9pm	18	7pm	
19	9	33pm	6	2pm	5	55pm	9	48pm	11	24	18	10pm	19	8pm	
20	10	11pm	7	6pm	5	37pm	6	15pm	10	314	19	11pm	20	9pm	
21	10	52pm	7	3pm	6	11pm	6	51pm	11	17	11	58	21	10pm	
22	11	26pm	8	8pm	6	31pm	7	26pm	11	55	12	322	22	11pm	
23	0	8pm	8	41pm	7	5pm	8	3pm	0	336	0	336	23	12pm	
24	0	3pm	9	22pm	7	11pm	8	35pm	0	556	1	273	24	1pm	
25	1	1pm	9	55pm	8	2pm	9	1pm	2	224	25	4pm	25	2pm	
26	1	55pm	9	45pm	10	35pm	1	536	2	151	4	48	26	3pm	
27	2	42pm	11	24pm	9	45pm	11	24pm	2	375	5	148	27	4pm	
28	3	33pm	0	1pm	10	35pm	11	25pm	2	375	5	148	28	5pm	
29	4	33pm	1	26pm	11	31pm	0	21pm	3	421	6	422	29	6pm	
30	5	49pm	2	25pm	9	4pm	1	26pm	5	66	7	58	30	7pm	
31	6	1pm	3	3pm	1	57pm	2	39pm	6	171	8	573	31	8pm	

\* In the morning.

† Afternoon.



#### DELTHAVEN.

Delfthaven, or the haven of the city of Delft, is about fourteen miles from Leyden, on the river Maas, by which it communicates with the sea. It is now a quiet, old-fashioned place, and of but little commercial importance. The haven or harbor, consists of a long canal running back from the river, bordered with trees, and its quay on either side bounded by old-fashioned houses, with high, quaint gables, some of them bearing the dates of their erection about a half a century previous to the embarkation of the Pilgrims. Here those who were to remain behind, including their venerable and beloved pastor, took leave of their friends and companions in exile, being "not able to speak to one another, for the abundance of sorrow to part."

The place still remains almost the same as when they left it; perhaps it is even more quiet; and the little Dutch vessel represented in the cut is quite as large, and probably, full as seaworthy as the little Speedwell, in which they embarked upon their voyage, taking their last leave of each other with many embraces and many tears, and looking back with straining eyes, as the level shores, and long familiar landmarks receded in the distance.

"When they came to the place," says Bradford, "they found the ship and all things ready; and such of their friends as could not come with them, followed after them; and sundry also came from Amsterdam to see them shipped, and to take leave of them. That night was spent with little sleep by the most, but with friendly entertainment and Christian discourse, and other real expressions of Christian love. The next day, the wind being fair, they went on board, and their friends with them, when truly doleful was the sight of the sad and mournful parting." "But the tide, which stays for no man, calling them away that were thus loth to depart, their reverend pastor, falling down on his knees, and all they with him, commended

them with most fervent tears to the Lord and his blessing; and then, with mutual embraces and many tears, they took their leave of one another — which proved to be their last leave to many of them." Such is the affecting description of that "Embarcation at Delfthaven," which was then but the sorrowful parting of a few poor, sad exiles from their friends, but is now seen to be the first act in the founding of an empire.

"Shut now the volume of history, and tell me, on any principle of human probability, what shall be the fate of this handful of adventurers? Tell me, man of military science, in how many months were they all swept off by the thirty savage tribes enumerated within the early limits of New England? Tell me, politician, how long did this shadow of a colony, on which your conventions and treaties had not smiled, languish on the distant coast? Student of history, compare for me the baffled projects, the deserted settlements, the abandoned adventures, of other times, and find the parallel of this. Was it the winter's storm, beating upon the houseless heads of women and children; was it hard labor and spare meals; was it disease; was it the tomahawk; was it the deep malady of a blighted hope, a ruined enterprise, and a broken heart, aching in its last moments, at the recollection of the loved and left beyond the sea; was it some, or all of these united, that hurried this forsaken company to their melancholy fate? And is it possible that neither of these causes, that not all combined, were able to blast this bud of hope? Is it possible, that from a beginning so feeble, so frail, so worthy not so much of admiration as of pity, there has gone forth a progress so steady, a growth so wonderful, an expansion so ample, a reality so important, a promise, yet to be fulfilled, so glorious?" — *Edward Everett's Oration, Dec. 20th, 1824.*

	Boston	N. York	Balt.	Charles- ton	San Franseiso.	Boston	N. York	Balt.	Charles- ton	San Franseiso.	
July	1 10 4pm	6 50am	5 35pm	6 4am	11 50s	10 6s	Oct.	1 9 2pm	8 45am	7 11am	8 4am
2 10 55am	7 42am	6 2am	6 57am	0 43s	10 48s	2 0 3pm	9 25am	7 47am	8 38am	0 22s	
3 11 44am	8 27am	6 53am	7 45am	1 24s	11 40s	3 1 1pm	10 5am	8 25am	9 15am	2 8s	
4 0 26am	9 13am	7 35am	8 27am	.....	1 56s	4 2 2pm	10 45am	9 7am	9 57am	2 58s	
5 1 8am	9 54am	8 16am	9 6am	0 26s	2 23s	5 2 41pm	11 32am	9 53am	10 43am	3 56s	
6 1 46pm	10 36am	8 52am	9 42am	1 13s	2 50s	6 3 49pm	1 26pm	9 145am	11 33am	5 1s	
7 2 24pm	11 6am	9 28am	10 18am	2 5s	3 11s	7 4 38pm	1 29pm	11 43am	9 36pm	6 16s	
8 3 1pm	11 44am	10 4am	10 57am	2 59s	3 50s	8 5 42pm	2 29pm	9 49pm	1 29pm	7 19s	
9 3 38pm	0 24pm	10 42pm	11 37pm	3 43s	4 49s	9 6 16am	3 33pm	1 57pm	2 39pm	8 22s	
10 4 20pm	1 6pm	11 23pm	0 11pm	4 49s	5 28s	10 7 20am	4 37pm	2 59pm	3 45pm	9 2s	
11 5 2pm	1 52pm	0 12pm	0 55pm	5 18s	6 0s	11 8 22am	5 36pm	3 57pm	4 47pm	10 5s	
12 5 57pm	2 44pm	1 5pm	1 41pm	6 50s	6 36s	12 9 18am	6 4am	5 45pm	5 45pm	10 43s	
13 6 23am	3 42pm	2 4pm	2 44pm	8 2s	7 17s	13 10 10am	6 56am	5 39pm	6 10am	11 17s	
14 7 25am	4 43pm	3 5pm	3 52pm	9 18s	8 26s	14 11 10am	7 43am	6 5am	7 9am	11 43s	
15 8 39am	5 47pm	4 5pm	4 53pm	10 32s	8 16s	15 11 48am	8 31am	6 57am	7 47am	0 16s	
16 9 32am	6 18pm	5 71pm	6 2pm	11 41s	9 31s	16 0 35pm	9 25am	7 45am	8 36am	1 21s	
17 10 31am	7 16pm	6 5pm	6 32pm	0 24s	10 27s	17 1 22pm	10 13am	9 24am	2 23s	1 46s	
18 11 25pm	8 3am	6 31pm	7 25pm	1 12s	11 21s	18 2 22pm	11 4am	9 26am	10 16am	3 29s	
19 0 13pm	8 59am	7 22am	8 14am	.....	1 51s	19 3 19pm	0 6pm	10 19am	11 9am	4 39s	
20 1 16am	9 45am	8 7am	8 58am	0 11s	2 24s	20 4 9pm	0 57pm	11 14am	0 2pm	2 45s	
21 1 45pm	10 29am	8 51am	9 41am	1 10s	2 55s	21 5 6pm	1 54pm	0 13pm	0 56pm	6 49s	
22 2 39pm	11 13am	9 31am	10 25am	2 11s	3 33s	22 6 2pm	2 59pm	1 12pm	1 56pm	7 36s	
23 3 1pm	0 1pm	10 21am	11 19am	3 30s	4 20s	23 6 29am	5 42pm	2 4pm	2 41pm	8 21s	
24 4 1pm	0 53pm	11 10pm	11 59pm	4 32s	5 0s	24 7 20am	4 31pm	2 33pm	3 37pm	8 53s	
25 5 1pm	1 5pm	0 29pm	0 53pm	5 10s	5 49s	25 8 10am	5 17pm	3 3pm	4 27pm	9 18s	
26 6 5pm	2 53pm	1 15pm	1 53pm	7 19s	6 35s	26 8 53am	6 0pm	4 29pm	5 12pm	10 3s	
27 6 3pm	3 1pm	2 22pm	3 4pm	8 34s	7 29s	27 9 31am	6 29am	5 0pm	5 55pm	10 38s	
28 7 45am	5 5pm	3 2pm	4 16pm	8 10s	8 20s	29 10 15pm	7 1am	5 46pm	6 16am	10 56s	
29 8 52am	6 5pm	4 25pm	5 20pm	11 2s	9 5s	30 10 56am	7 37pm	6 1am	6 56am	11 11s	
30 9 41am	6 25pm	5 12pm	6 1pm	11 43s	9 58s	31 11 31am	8 16am	6 43am	7 35am	0 25s	
31 10 30am	7 23pm	6 57pm	6 23pm	0 17s	10 47s	31 0 15pm	9 1am	8 17am	1 13s	11 54s	
Aug.	1 11 23pm	8 5am	6 29pm	7 22pm	0 46s	11 36s	2 1 1pm	9 46am	8 7am	8 58am	2 8s
2 0 7pm	8 45pm	7 10pm	8 2am	.....	1 12s	2 2 45pm	10 31am	8 52am	9 42am	3 28s	
3 0 25pm	9 23pm	7 45pm	8 39pm	0 27s	1 32s	3 3 25pm	11 18am	9 39am	10 39am	3 57s	
4 1 11pm	9 57pm	8 1pm	9 8am	1 15s	1 52s	4 3 25pm	0 12pm	10 39am	11 19am	4 41s	
5 1 45pm	10 26pm	8 51pm	9 41pm	1 45s	2 24s	5 4 20pm	1 8pm	11 25am	0 13pm	5 48s	
6 2 21pm	11 3pm	9 25pm	10 1pm	2 19s	3 36s	6 5 18pm	2 5pm	0 25pm	1 7pm	6 47s	
7 2 58pm	11 42pm	10 2pm	10 51am	3 0s	3 31s	7 6 20pm	3 5pm	1 28pm	2 6pm	7 41s	
8 3 3pm	0 24pm	10 42pm	11 37pm	4 3s	4 54s	8 6 59am	4 5pm	2 27pm	3 10pm	8 28s	
9 4 24pm	1 13pm	11 39am	0 17pm	5 17s	4 49s	9 7 45am	5 3pm	3 24pm	4 13pm	9 12s	
10 5 21pm	2 7pm	9 2pm	1 1pm	6 35s	5 31s	10 8 48am	6 1pm	4 21pm	5 13pm	9 32s	
11 6 2pm	3 1pm	1 33pm	2 1pm	7 51s	6 24s	11 9 43am	6 29am	5 14pm	6 10pm	10 20s	
12 7 7pm	4 2pm	2 49pm	3 25pm	9 11s	7 23s	12 10 37am	7 22am	6 3pm	6 37am	0 52s	
13 8 2pm	5 27pm	3 43pm	4 38pm	10 23s	8 24s	13 11 23am	8 11am	6 37am	7 31am	0 22s	
14 9 14am	6 39pm	4 49pm	5 41pm	11 18s	9 28s	14 0 19pm	9 6am	7 29am	8 21am	1 24s	
15 10 13am	6 59am	5 14pm	6 13pm	0 6s	10 29s	15 1 11pm	9 58am	8 9am	9 10am	2 88s	
16 11 5am	7 49pm	6 10pm	7 5pm	0 49s	11 15s	16 2 4pm	10 45am	9 13am	9 56am	3 18s	
17 11 52am	8 35pm	7 1am	7 53pm	.....	1 5s	17 2 53pm	11 37am	9 57am	10 47am	4 10s	
18 0 39pm	9 23am	7 41pm	8 35pm	0 16s	1 49s	18 3 40pm	0 29pm	10 45am	11 33am	4 58s	
19 1 21pm	10 7am	8 27pm	9 17pm	1 10s	2 18s	19 4 2pm	1 15pm	11 33am	0 29pm	5 47s	
20 2 1pm	10 47pm	9 11am	10 1am	2 12s	2 32s	20 5 16pm	2 2pm	0 23pm	1 5pm	6 38s	
21 2 53pm	11 37pm	9 58am	10 48pm	3 26s	3 20s	22 6 6pm	5 12pm	1 13pm	1 52pm	7 0s	
22 3 16pm	0 22pm	10 56am	11 39am	4 42s	3 58s	22 6 29am	3 49pm	2 2pm	2 41pm	7 49s	
23 4 1pm	1 32pm	11 59am	0 35pm	6 5s	4 51s	23 7 18pm	4 26pm	2 48pm	3 33pm	8 39s	
24 5 53pm	2 38pm	0 59pm	1 37pm	7 31s	5 49s	24 8 4pm	5 15pm	3 35pm	4 25pm	9 46s	
25 6 26pm	3 49pm	2 8pm	2 49pm	8 48s	6 48s	25 8 53pm	6 2pm	4 22pm	5 11pm	9 26s	
26 7 53pm	4 4pm	3 11pm	3 5pm	9 50s	8 0s	25 9 39pm	6 26am	5 7pm	6 3pm	9 56s	
27 8 35pm	5 47pm	3 4pm	4 4pm	10 36s	8 56s	27 10 26pm	7 12am	5 51pm	6 27am	10 19s	
28 9 26pm	6 12pm	4 57pm	5 59pm	11 13s	9 49s	28 11 13pm	7 55am	6 18am	7 34am	0 49s	
29 10 12am	6 58pm	5 38pm	6 13pm	11 49s	10 38s	29 11 58pm	8 42am	7 7am	7 59am	1 16s	
30 10 53pm	7 35am	5 58pm	6 53pm	11 50s	11 27s	30 0 45pm	9 32am	7 53am	8 45am	0 25s	
31 11 2pm	8 11am	6 37am	7 27am	.....	0 15s	31 1 14pm	10 19am	8 40am	9 39am	2 52s	
Sept.	1 0 1pm	8 46am	7 11am	8 3pm	0 5s	0 49s	3 2 22pm	11 4am	9 27am	10 17am	3 37s
2 0 25pm	9 22pm	7 41pm	8 35pm	0 12s	1 20s	3 3 9pm	11 51am	10 14am	11 3am	4 21s	
3 1 10pm	9 56am	8 15pm	9 8am	1 37s	1 49s	3 4 58pm	0 4pm	11 3am	11 51am	5 58s	
4 1 16pm	10 36pm	8 51pm	9 42pm	1 10s	2 0s	5 4 52pm	1 38pm	11 57am	0 42pm	5 57s	
5 2 26pm	11 8pm	9 26pm	10 26pm	3 6s	2 22s	6 5 45pm	2 35pm	0 55pm	1 31pm	6 39s	
6 3 3pm	11 52pm	10 12am	11 24am	3 55s	3 0s	7 6 18pm	3 31pm	1 56pm	2 35pm	7 37s	
7 3 5pm	0 45pm	11 23pm	11 56pm	5 0s	5 53s	8 7 19pm	4 25pm	2 57pm	3 42pm	9 12s	
8 4 15pm	1 43pm	0 2pm	0 46pm	6 26s	4 37s	9 8 26pm	5 37pm	3 58pm	4 49pm	9 26s	
9 6 3pm	2 59pm	1 16pm	1 49pm	7 32s	5 53s	10 9 21pm	6 8am	4 56pm	5 52pm	9 43s	
10 6 37pm	3 58pm	2 29pm	3 2pm	8 46s	7 10s	11 10 21pm	7 7am	5 53pm	6 21am	10 19s	
11 7 17pm	5 4pm	3 27pm	4 14pm	9 10s	8 21s	12 11 17pm	7 58pm	6 22am	7 16am	0 36s	
12 8 51pm	6 6pm	4 27pm	5 1pm	10 51s	9 22s	13 0 6pm	8 51am	7 15am	1 29s	11 31s	
13 9 18pm	6 25am	5 1pm	6 15pm	11 30s	10 20s	14 0 51pm	9 49am	8 2am	8 53am	0 24s	
14 10 4pm	7 24am	6 9pm	6 46pm	11 57s	11 20s	15 1 40pm	10 24am	8 46am	9 37am	2 46s	
15 11 22pm	8 9am	6 34am	7 26am	11 50s	0 28s	16 2 23pm	11 6am	9 27am	10 18am	3 20s	
16 0 12pm	8 56am	7 29am	8 11am	0 9s	0 51s	17 3 3pm	11 49pm	10 8am	10 57am	4 28s	
17 0 57pm	9 43am	8 43pm	8 55am	1 12s	1 23s	18 3 41pm	0 31pm	10 49am	11 33am	4 42s	
18 1 15pm	10 29pm	8 5pm	9 46pm	2 17s	1 15s	19 4 27pm	1 11pm	11 31am	0 19pm	5 17s	
19 2 3pm	11 1pm	9 46pm	10 39am	3 23s	2 23s	20 5 11pm	1 58pm	0 18pm	1 1pm	6 2s	
20 3 31pm	0 15pm	10 35pm	11 24am	4 49s	3 10s	21 5 59pm	2 46pm	1 7pm	1 46pm	7 0s	
21 4 30pm	1 1pm	11 36am	0 22pm	6 85s	4 12s	22 6 25pm	3 38pm	1 59pm	2 32pm	7 20s	
22 5 23pm	2 29pm	0 42pm	1 22pm	7 22s	5 27s	23 7 15pm	1 39pm	2 52pm	3 37pm	7 50s	
23 6 7pm	3 24pm	1 15pm	2 21pm	8 22s	6 28s	24 8 12pm	5 25pm	3 46pm	4 39pm	10 17s	
24 7 5pm	4 29pm	2 41pm	3 28pm	9 16s	7 11s	25 9 7pm	6 21pm	4 40pm	5 35pm	9 11s	
25 8 4pm	5 15pm	3 39pm	4 25pm	10 6s	8 46s	26 10 2pm	6 48pm	5 23pm	6 24pm	9 36s	
26 8 53pm	6 1pm	4 22pm	5 13pm	10 36s	9 36s	27 10 53pm	7 38pm	6 26pm	6 53pm	0 26s	
27 9 36pm	6 23pm	5 1pm	5 57pm	10 56s	10 20s	28 11 43pm	8 26am	6 53am	7 41am	1 12s	
28 10 16pm	7 2pm	5 37pm	6 17pm	11 13s	11 6s	29 0 30pm	9 17am	7 49am	8 31am	1 53s	
29 10 53pm	7 35pm	6 1pm	6 53pm	11 42s	11 40s	30 1 17pm	10 3am	8 23am	9 14am	2 30s	
30 11 26pm	8 10pm	6 25am	7 28pm	.....	0 2s	31 2 3pm	19 46pm	9 7am	9 55am	3 6s	

Afternoon

In the morning.



#### BURYING HILL, PLYMOUTH.

On the brow of one of the highest eminences in the old town of Plymouth rest the mortal parts of many of the Pilgrim Forefathers, — too many of them, alas, without even a humble gravestone to mark the spot of their sepulture. The turf, in gently rising mounds, indicates what tradition alone besides, in the absence of all written testimony, makes more certain, that there the fathers are sleeping from their labors.

When the modern pilgrim finds his way to Plymouth, and, with filial veneration, directs his steps to the sacred spot where rest the fathers of New England, he is peculiarly struck with the remarkable objects which are presented to his view. When he has ascended the high hill, and looks around upon the innumerable gravestones which affection has placed as the last tributes to the memory of departed parents, relatives and friends, he seeks in vain for any ancient memorial to mark the graves of the May-Flower pilgrims of 1620. In vain he inquires for the graves of those who came in the Fortune in 1621, in vain for those of the Ann and Little James, in 1623. In vain he asks, in vain he seeks. Of all these, Thomas Cushman alone of the Fortune, and Thomas Clark alone of the Ann, are remembered by tablets. Their graves alone were surely designated by gravestones on Burying Hill. One of the old comers, Phineas Pratt, was similarly remembered in the old burial-ground in Charlestown. Uncertain tradition, however, has attempted to point out the burial places of a few others, and modern memorials have been erected to their memory.

In an elevated position in one part of this field of the dead, may be seen the shaft erected in memory of William Bradford, not only, emphatically the Governor of the Plymouth Colony, but the faithful chronicler of the Pilgrims,

his associates in the great enterprise. In another direction is the large slab commemorating the life and services of the venerable John Howland; and still, in another portion of the field, the monument which the filial regard of the Cushman family has raised over the grave of their pious ancestor, the excellent Elder. These, indeed, are modern erections, but not the less honorable.

The site upon Burying Hill on which the Cushman monument stands has hallowed family associations, and is not in itself entirely devoid of interesting recollections of a more general character. It is the identical spot selected for the burial place of Elder Cushman by his bereaved friends and religious associates; and beneath the turf which has grown for ages, and whose verdure has only now and then been disturbed, as a new tenant has been admitted to the community of the dead, to mingle ashes with those of the venerated sire, rest the remains of the earliest of this Pilgrim family, — the Cushmans. Around the Elder's humble grave were buried many of the church, who, from their feelings of attachment, desired to be near him in death, as they had been with him in life; — among these were the officers of the church, with whom he had for so many years ministered; but his pastor was not permitted to be with him in his long sleep, but is quietly reposing in the distant regions of the sunny South. From this spot the turf has now been removed, — but the sacred remains are still there. The turf has given place to more enduring granite.

Close beside the green hillock subsequently selected as the grave lot of the venerable Elder, the fathers in earlier days built their humble sanctuary — small, indeed, but then the only one in New England, and that one their own, and untrammelled by the yoke of antichristian bondage. They

did not place it obscurely, shaded and hidden from sight, as if afraid or ashamed that their house of God should be seen; — but upon the hill-top, a guide for the wayfarer, a mark for all — the first object to attract and welcome the eye of the Pilgrim or rest, seeking shelter and repose in the land where the most ardent and lowly might worship God according to the dictates of their own conscience, uncontrolled by the degrees of an established church and the intolerance of a blasting hierarchy. Here, still earlier, stood the scanty fortification of the peaceful little band of Puritans, — a simple platform, with slender roof and unpretending walls, hewn from native forests. Slight as was the structure, it served well to protect them from the sudden incursions of savage beasts, and as a defense against the hostile attacks of the more wily and barbarous Indian foe. It served another and a holier purpose — it was the place of prayer, the place of worship — the first remnants of the first building of the first church of the Pilgrim Fathers.

While standing within this ancient cemetery, the stranger is fain to strike with the appearance of the large number of monumental tablets and burial mounds which he notices on all sides, compared with the smaller number of buildings in the village as it stands — that the dwellings of the dead far outnumber the dwellings of the living. The innumerable scenes presents a vast assemblage of the past and a more limited population of the present — the quiet remains of other days above, and busy and bustling life of to-day below. Here is where the fathers lie with their children of more than two centuries, gathered together in family clusters, awaking the call of the last great day. And where could they be more appropriately than in the chosen land of their American pilgrimage?

Leaving the eye beyond the hill at his feet, and beyond the village and a few sparsely scattered houses adorning the stranger will witness the placid and hospitable waters, formed into a soft and quiet harbor by the almost surrounding headlands and projecting beaches. His attention will be drawn to the *Cape Cod*, at the eastward, with its twin beacons, and to *Sagadahock*, and for a flavoring food for the almost famished voyagers, — to *Clark's Island*, in

the north, where the Pilgrims, after their arrival in their new home, first passed the Christian Sabbath in prayer, — to the fields of *Duxbury* and the green elevation there, which bears the name of the redoubtable Captain Standish, — to the lands of *Kingston*, where piously dwelt good Elder Cushman and his devoted Mary, beside their never-failing spring of living water, and where they terminated their earthly pilgrimage, — and to the meanderings of *Jones's River*, and *Rocky Nook*, and *Plain Dealing*; and more westerly, to the chain of undulating hills, upon the chief of which is laid the foundation of the national monument to the Pilgrim Fathers, and to the fresh waters of *Billingham* *Strait*, and the numerous crystal lakes of the townships. More southerly will be seen the *Town Brook* and *Pilgrim's Spring*, where the Pilgrims first quenched their burning thirst, and *Watson's Hill*, where first appeared human friendship, in the person of the almost civilized *Massasoit*. Further to the east, following the circuit, the villages of *Wellfleet* and *Eel River*, and the far-famed beach, and the warning and inviting *Mannumet* are seen. All these the stranger sees, and he may also see, almost at his feet, the famous *Leyden Street*, where were the first dwellings of the Pilgrims, and the *Middle Street*, and the *North Street*, lying parallel to each other, and at right-angles with and between the *Main Street* and the *Water Street* at the *Water Side*, where were the first allotments of land — and he may see *Forefathers Rock*, the place of landing, and *Cole's Hill*, where were laid to rest, during the first winter, half of the precious freight of the *Mary Flower*. Well may we say to him, as he stands 'by side the graves of the Fathers,

Stranger! — As from this sacred spot, hallowed by the remembrance of the true-hearted, who sleep beneath its turf, you cast your eyes around and view scenes unsurpassed in interest and beauty, — while you behold flourishing towns and villages abounding in industry, prosperity, and happiness, where once all was dreary, inhospitable, and desolate, — think of the self-sacrificing forefathers, learn to emulate their virtues, and timely resolve to transmit undimmed, to the latest posterity, the glorious lessons of their noble examples.

## METEOROLOGY.

The annexed diagram is intended to show the prevailing direction of the winds, and to illustrate the crossings at the calm belts. The arrows fly with the wind.

This diagram is copied, and this paper concluded, from the "Physical Geography of the Sea," New Haven, 1850, — a work written by Lieut. *Merry*, of the National Observatory, and published by *Hunting & Brothers*, New York.

We do not propose to give a treatise on Meteorology. This is no place for any such treatise as the place only for *metamorphosis*, and therefore we shall aim to give a general idea of the system of circulation which keeps in perpetual motion the great aerial ocean which envelops our planet. We then propose to show reasons for the air-crossings in the calm belts. We shall also show the meteorological influences of that great expanse of sea about the South Polar regions, and then endeavor to find out from meteorology whether the unexplored regions within the Antarctic Circle comprise land or water.

As to the general system of atmospheric circulation, we need only refer to the diagram. It shows at a glance the *prevailing direction* of the wind in all latitudes *at sea*, except where the monsoons blow.

Now for the air-crossings at the calm belts. Take that of *Cancer* for illustration. On one side the wind is perpetually blowing toward the equator, and on the other almost as perpetually blowing toward the pole. These winds are on the surface, and to supply air for such winds there must be a regular in-pouring in at the top of this calm belt. As the surface currents carry away this air, both toward the north and the south, just so much as they carry away must return by counter-currents, both from the north and the south, to keep up the supply. These counter currents are upper currents. The same in-pouring and out-flowing take place at the calm belt of the equator, and the calm belt of *Cancer*, only at the equator the in-pouring currents are at the surface

of the earth, while at the two tropical calm belts they are in the regions of the upper air. (Vide diagram.)

In consequence of diurnal rotation, these currents, as they come from toward the pole and approach the equator, whether as upper or as surface currents, have easting in them, and, in like manner, they acquire westing as they return toward the poles.

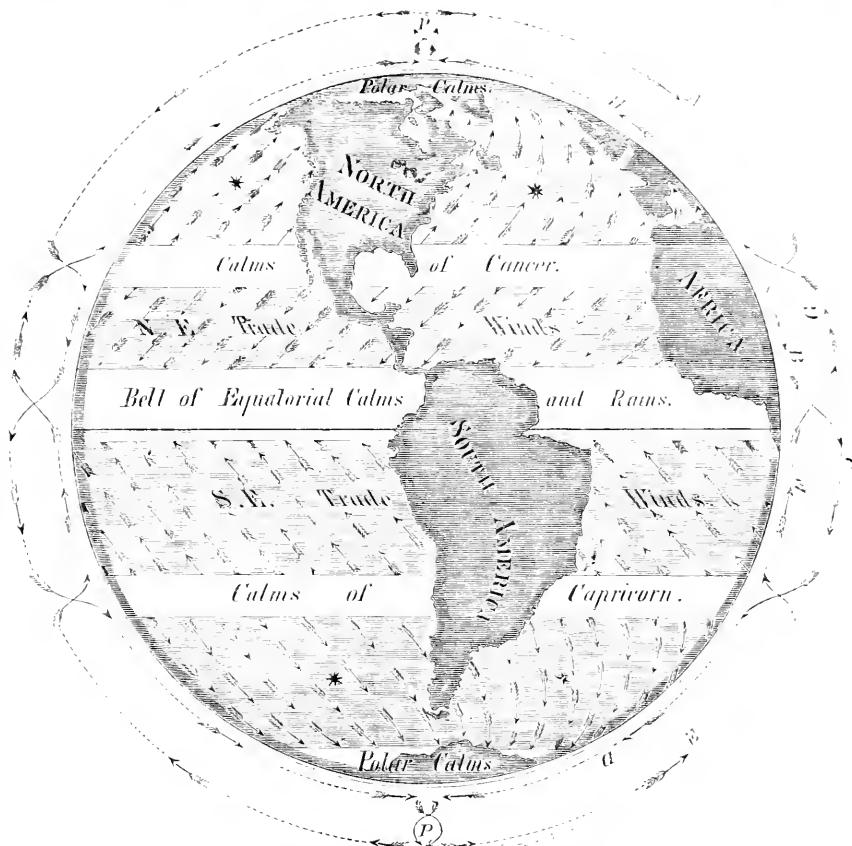
Does the air which is poised into these calm belts from the north, for instance, return to the north as it flows out, or does it keep on in its circuit toward the south?

There are reasons for supposing that the air which enters the calm belts from the north flows out toward the south, and *vice versa*. They are these —

1st. The identity of atmospheric constituents in all parts of the earth, notwithstanding the unequal distribution over its surface, both as to place, numbers, and kind, of the agents which corrupt and of those which purify the air. Hence the inference in favor of a general and regular intermingling. For, if the atmosphere of one hemisphere were to become different from that of the other, the air of the northern would not be sent to the dipterous fauna of the southern hemisphere, and conversely.

2d. Notwithstanding the evaporating surface of the southern hemisphere so much exceeds that of the northern, the amount of precipitation upon the land is very much greater in the one that exposes the smallest sea surface or source of vapor.

This circumstance had induced meteorologists, in treating of the exquisite workmanship displayed in the atmospheric machinery that surrounds our planet, to liken the condenser, of the steam engine. How, then, without a crossing of the winds at the calm places, could the vapor be transported from one side of the equator to the other?



\* \* \* Prevailing winds from the Equator to the Poles.

3d. The sea water of the southern hemisphere is, parallel for parallel, specifically heavier than sea water of the northern hemisphere, and therefore saltier.

The mean specific gravity of sea water is about .0007 greater in the southern than in the northern hemisphere.

The vapor which gives excess of precipitation to the northern hemisphere is supplied from the southern, and can be conveyed through no other channel but the air, nor brought by any other carriers but the winds. Half the quantity of fresh water that it would take to dilute the brine of southern oceans, so as to reduce the specific gravity of their waters to the average of *cis*-equatorial seas, suggests the amount of fresh water which the winds of the southern hemisphere take up as vapor, carry away, and do not rain down again on that side of the equator. The water which is thus transported in clouds, and rained upon northern fields, has to find its way back to the seas of the South through the currents of the ocean.

4th. Ehrenberg's discoveries with the microscope. In the sea dust and red fogs of the North Atlantic he recognizes organisms from South America. This dust has been collected for his microscope on the polar side of the north-east trades; and the inference is, that it was conveyed first to the equatorial calm belt by the surface wind, and was carried thence to the calms of Cancer by the upper currents.

The westerly winds which blow counter to the trades on the polar side of the tropical calms are much more steady, strong, and constant in the southern than in the northern hemisphere.

The former have won for themselves, among mariners, the name of the "brave west winds" of the extra-tropical South. They are quite as constant from the West as

in the North Atlantic the trades are from the East. Sailing with them to and from Australia, ships, under canvas alone, have attained a speed and accomplished runs which steam has never enabled any vessel to reach. In two months' time and less, sailing vessels have performed voyages of complete circumnavigation before these brave winds.

For convenience of description we will hereafter allude to these "brave west winds," or rather to the westerly winds which prevail on the polar side of Cancer and Capricorn in both hemispheres, as the "counter-trades."

Since the counter-trades of the southern are stronger and steadier than the counter-trades of the northern hemisphere, another link would be established in the chain of circumstances tending to show the calm belt crossings of the wind if it should turn out that the southeast trades are also fresher than the northeast.

To settle this question, Lieut. Maury compared the knots run per hour by 2235 vessels through the southeast trades of the Indian Ocean and through both systems of the Atlantic. The average speed of ships propelled by these winds is expressed in the following statement:—

Average Speed through the Trade-winds of the North Atlantic and South Indian Oceans.

KNOTS PER HOUR, FROM				COURSE STEERED THROUGH,
10° to 15°.	15° to 20°.	20° to 25°.	AVERAGE.	
N.E. Trades.	S.E. Trades.	N.E. Trades.	S.E. Trades.	N.E. Trades, S.E. Trades.
7	7	6	6	7

Average course steered through the N.E. trades, N.W. & W. S.E. trades, W.S.W.

KNOTS PER HOUR, FROM								
25 to 20°		20 to 15°		15 to 10°		AVERAGE	COUSE STEERED THROUGH	
S.E.	Trades	S.E.	Trades	S.E.	Trades	S.E.	N.E.	Trades
25	5	25	6	24	6	24	5	5
24	5	24	6	23	6	23	5	5
23	5	23	6	22	6	22	5	5
22	5	22	6	21	6	21	5	5
21	5	21	6	20	6	20	5	5
20	5	20	6	19	6	19	5	5
19	5	19	6	18	6	18	5	5
18	5	18	6	17	6	17	5	5
17	5	17	6	16	6	16	5	5
16	5	16	6	15	6	15	5	5
15	5	15	6	14	6	14	5	5
14	5	14	6	13	6	13	5	5
13	5	13	6	12	6	12	5	5
12	5	12	6	11	6	11	5	5
11	5	11	6	10	6	10	5	5
10	5	10	6	9	6	9	5	5
9	5	9	6	8	6	8	5	5
8	5	8	6	7	6	7	5	5
7	5	7	6	6	6	6	5	5
6	5	6	6	5	6	5	5	5
5	5	5	6	4	6	4	5	5
4	5	4	6	3	6	3	5	5
3	5	3	6	2	6	2	5	5
2	5	2	6	1	6	1	5	5
1	5	1	6	0	6	0	5	5
0	5	0	6	0	6	0	5	5

So, to treat these ships as *anemometers* that will really enable us to measure the comparative strength of the winds, we should reduce the average knots per hour to the average speed of a mean ship sailing through average "trades" in each ocean, with the wind impinging upon her sails at the same angle for all three; as, for example, just abaft the beam, as in the North Atlantic.

Applying this correction, we may state the speed of a mean ship sailing with average trades just abeam to be as follows.—

Through the N. E. of the Atlantic 1000 of knots per hour.  
 Through the S. E. 1000 of knots per hour.  
 Through the S. E. 1000 of knots per hour.  
 Through the S. E. 1000 of knots per hour.  
 Through the Indian Ocean 1000 of knots per hour.

Thus it is clearly established that the S. E. trades are stronger than the N. E.; and so they should be, if there be a crossing of winds in the calm belt of Capricorn.

The counter-trades of the southern hemisphere move, as before stated, toward their pole more steadily and briskly than do the counter-trades of the northern hemisphere. Vessels sailing through the latter, as from New York to England, average 150 miles a day. Along the corresponding latitudes through the former, as on a voyage to Australia, the average speed is upward of 290 miles a day. Consequently, the counter-trades of the southern hemisphere transport, in given times, larger volumes of air toward the south than our counter-trades do toward the north. This air returns to the tropical calm belts as an upper current. If, descending there, it feeds the trade-winds, then, the supply being more abundant for the S. E. trades than for the N. E., the S. E. trades must be the stronger; and so they are,—observations prove them so to be.

Every one who has sailed in that southern girdle of waters which belt the earth, on the polar side of  $49^{\circ}$  S., has been struck with the force and trade-like regularity of the westerly winds which prevail there. The waves, driven before these winds, assume, in their regularity of form, in the magnitude of their proportions, and in the stanchness of their march, an aspect of majestic grandeur that the billows of the sea never attain elsewhere.

No such waves are found in the northern hemisphere, nor in the trade-winds; for, though the S. E. trades are quite as constant, yet they have not the force to pile the water in such heaps, nor to arrange the waves so orderly, nor to drive them so rapidly, as those "brave" winds do. Their billows, following each other with measured tread, look, with their rounded crests and deep hollows, more like mountains rolling over a plain than the waves which we are accustomed to see.

Many days of constant blowing over a wide expanse of ocean are required to get up such waves. It is these winds and waves which, on the voyage to and from Australia, have enabled the modern clipper-ship to attain a speed, and a day after day, to the nautical runs, which at first were considered, even by the nautical world, as fabulous, and are yet regarded by all with wonder and admiration.

From these facts and circumstances, it may be considered as established that the general system of atmospheric circulation is more active in the southern than it is in the northern hemisphere. Hence it may be inferred, by way of corollary, that the counter trades of the south are not so easily arrested in their course, or turned back in their circuits, as are those of the north. Consequently, there should not, either in the trades or the counter trades of the southern hemisphere, be as many calms as in those of the northern system.

Hence the following facts in meteorology are established. —

That the S. E. trade-winds are stronger than the N. E.; that the N. W. passage winds — the counter-trades of the south — are stronger and less liable to interruption in their circuits than the S. W., the counter-trades of the north; that the atmospherical circulation is more regular and brisk in the southern than it is in the northern hemisphere; and, to repeat, since the wind moves in its circuits more briskly through the southern than it does through the northern hemisphere, it consequently has less time to tarry or dally by the way in the south than in the north — hence the corollary instated.

These premises being admitted, we may ascend another round on this ladder, and argue that, since the atmosphere moves more briskly and in more constant streams through its general channels of circulation in the southern than it does through them in the northern hemisphere; and that, since it is not arrested in its courses by calms as often in the former as it is in the latter,—neither should it be turned back by the way, so as to blow in gales from the direction opposite to that in which the general circulation carries it.

The atmosphere, in its movements along its regular channels of circulation, may be likened,—that in the southern hemisphere, to a fast railway train; that of the northern, to a slow. The slow train may, when "steam is up," run as fast as the fast train, but it is not obliged to get through so quick; therefore, it may dally by the way, stop, run back, and still be through in time. Not so the fast; it has not time to stop often or to run back far. Neither have the counter-trades of the south time to blow backward; consequently, a gale with easting in it is an event of much more seldom occurrence in the extra-tropical south than in the extra-tropical north.

We shall appeal to observations for the correctness of this conjecture, and claim for it also, as presently will appear, the dignity of an established truth.

*Average Number of Gales to the 1000 Observations, with Easting and with Westing on them, between corresponding Parallels in the North and South Atlantic, as shown by Maury's Storm and Rain Charts.*

	North.	South.
Between 40° and 45°	17,254	8,756
	Gales in 100° with easting.....	23
	..... with westing.....	82
	Number of observations.....	11,425
Between 45° and 50°	5,543	
	Gales in 100° with easting.....	24
	..... with westing.....	106
	Number of observations.....	4,816
Between 50° and 55°	5,163	
	Gales in 100° with easting.....	131
	..... with westing.....	107

Thus between the parallels of  $49^{\circ}$  and  $55^{\circ}$  there were in the northern hemisphere 33,515 observations, and for every 1000 observations there were 24 gales with easting and 105 with westing. In the southern, there were 19,-173 observations, and for every 1000 of these there were 5 gales with easting and 80 with westing in them.

In some aspects, the meteorological agents of the two hemispheres, especially those forces which control the winds and weather, differ very much. The difference is so wide as to suggest greater regularity and rapidity of circulation on one side of the equator than on the other.

Accum. Number of Calms to the 1000 Observations, between the Parallels of 30° and 55° in the North and South Atlantic, and between the Parallels of 30° and 60° in the North and South Pacific Oceans, as shown by Maury's Pilot Charts.					
BETWEEN THE PARALLELS OF		ATLANTIC.		PACIFIC.	
		North.	South.	North.	South.
30° and 35°, No. of observations		12,035	15,812	22,730	44,886
Calms to the 1000 do.	.....	46	26	31	35
35° and 40°, No. of observations		22,136	23,416	13,363	62,253
Calms to the 1000 do.	.....	37	24	31	33
40° and 45°, No. of observations		16,393	8,295	12,400	38,180
Calms to the 1000 do.	.....	15	27	53	23
45° and 50°, No. of observations		8,087	4,811	15,895	4,300
Calms to the 1000 do.	.....	38	35	21	24
50° and 55°, No. of observations		3,619	3,650	32,801	5,728
Calms to the 1000 do.	.....	49	16	32	17
55° and 60°, No. of observations				15,470	9,114
Calms to the 1000 do.	.....			43	21

Total No. of observations.	63,600	35,337	113,219	164,839
Average calms to the 1000 do.	41	21	38	23

plains, their snowy mantles in winter, their sandy deserts in summer, and their mountain ranges always. In the other there is but little land and less snow. On the polar side of  $40^{\circ}$  S. especially, if we except the small remnant of this continent that protrudes beyond that parallel in the direction of Cape Horn, there is scarcely an island. All is sea. There the air is never dry; it is always in contact with a vapor-giving surface: consequently the winds there are loaded with moisture, which, with every change of temperature, is either increased by farther evaporation or diminished by temporary condensation. *The propelling power of the winds in the southern hemisphere resides chiefly in the latent heat of the vapor which they suck up from the engirding sea on the polar side of Capricorn.*

Maury's investigations show that within the trade-wind regions of both hemispheres the calm and rain curves are symmetrical; that in the extra-tropical regions the symmetry is between the calm and fog curves, and also, especially in the northern hemisphere, between the gale and rain curves.

Lieutenant Van Gogh, of the Dutch navy, in an interesting paper on the connection between storms near the Cape of Good Hope and the temperature of the sea,\* presents a storm and rain chart for that region. It is founded on 17,810 observations, made by 500 ships, upon wind and weather, between  $14^{\circ}$  and  $32^{\circ}$  E. and  $33^{\circ}$  and  $37^{\circ}$  S.†

By that chart the gale and rain curves are so symmetrical that the phenomena of rains and gales in the extra-tropical seas present themselves suggestively as cause and effect. The general storm and rain charts of the Atlantic Ocean, prepared at the National Observatory, hold out the same idea. Let us examine, expand, and explain this fact.

We ascribe the trade-winds to the latent heat which is set free by the condensation of aqueous vapor in the equatorial calm-belt. But to what shall we ascribe the counter-trades, particularly of the southern hemisphere, which blow with as much regularity toward the S. pole as the northeast trades of the Atlantic do toward the equator? Shall we say that those winds are drawn toward the south pole by heat, which causes them to expand and ascend in the Antarctic regions? It sounds somewhat paradoxical to say that heat causes the winds to blow toward the poles as well as toward the equator; but (we quote from the "Physical Geography,") —

"It is held as an established fact by meteorologists that the average amount of precipitation is greater in the northern than in the southern hemisphere; but this, I imagine, applies rather to the land than the sea. On the polar side of  $40^{\circ}$ , it is mostly water in the southern, mostly land in the northern, hemisphere. It is only now and then, and on rare occasions, that ships carry rain-gauges to sea. We can determine by quantitative measurements the difference in amount of precipitation on the land of the two hemispheres; and it is the result of this determination, I imagine, that has given rise to the general remark that the rain-fall is greater for the northern than it is for the southern hemisphere. But we have few hyetographic measurements for quantity at sea; there the determinations are mostly numerical. Our observers report the 'times' of precipitation, which, whether it be in the form of rain, hail, or snow, is called by the charts, and in this discussion, *rain*. Among such a large corps of observers, rain is sometimes, no doubt, omitted in the log; so that in all probability the charts do not show as many 'times' with rain as there are 'times' actually with rain at sea.

"With the view of comparing the rains at sea between the parallels of  $55^{\circ}$  and  $60^{\circ}$ , both in the North and South Atlantic, we have taken from the charts the following figures: —

South — Observations, 8410; gales, 1228; rains, 1105
North — " 525; " 131; " 64
Gales to the 1000 observations . . . S. 146; N. 256

Rains " " 8.131; N. 121
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"That is, for every 10 gales there are in the southern hemisphere 9 rains, and in the northern 4.7. In which

\* De Stormen nabij de Kaap de Goede Hoop in verband beschouwd met de Temperatuur der Zee.

† See "Physical Geography of the Sea," new edition, 1859, p. 321.

hemisphere does most water fall on the average during a rain at sea? Observations do not tell, but there seems to be a philosophical reason why it should rain not only oftener, but more copiously at sea, especially in the extra-tropical regions, in the southern hemisphere, than in those of the northern. On the polar side of  $40^{\circ}$  N., for example, the land is stretched out in continental masses, upon the thirsty bosom of which, when the air drops down its load of moisture, only a portion of it can be taken up again: the rest is absorbed by the earth to feed the springs. On the polar side of  $40^{\circ}$  S. we have a water instead of a land surface, and as fast as precipitation takes place there, the ocean replenishes the air with moisture again. It may consequently be assumed that a high dew point, at least one as high as the ocean can maintain in contact with winds blowing over it, and going from warmer to cooler latitudes all the time, is the normal condition of the air on the polar side of  $40^{\circ}$  S.; whereas on the polar side of  $40^{\circ}$  N. a low dew point prevails. The rivers to the north of  $40^{\circ}$  could not, if they were all converted into steam, supply vapor enough to make up this average difference of dew point between the two hemispheres.

"The symmetry of the rain and storm curves on the polar side of  $40^{\circ}$  S. suggests that it is the condensation of this vapor which, with the liberation of its latent heat, gives such activity and regularity to the circulation of the atmosphere in the other hemisphere.

"On the polar side of  $40^{\circ}$  S., near Cape Horn, the gauge of Captains King and Fitzroy showed a rain-fall of 153.75 inches in 41 days.

"There is no other place, except Cherrapongie, where the precipitation approaches this in amount. Cherrapongie is a mountain-station in India, 4500 feet high, which, in latitude  $25^{\circ}$  N., acts as a condenser for the monsoons fresh from the sea. But on the polar side of latitude  $45^{\circ}$ , in the northern hemisphere, it is, except along the American shores of the North Pacific, a physical impossibility that there should be a region of such precipitation as King and Fitzroy found on the western slopes of Patagonia, — a physical impossibility, because the peculiar combination of conditions required to produce a Patagonian rain-fall is wanting on the polar side of  $45^{\circ}$  N.

"There is not in the North Atlantic water surface enough to afford vapor for such an amount of precipitation. In the North Pacific the water surface may be broad and ample enough to afford the vapor, but over neither of these two northern sheets of water are the winds continuous enough from the westward to bring in the requisite quantities of vapor from the sea. Moreover, if the westerly winds of the extra-tropical north were as steady and as strong as those of the south, there is lacking in the north that continental relief — mountain-ranges rising abruptly out of the sea, or separated from it only by lowlands — that seems to be necessary to bring down the rain in such floods."

Colonel Sykes\* quotes the rain-fall of Cherrapongie at 605.25 inches for the 214 days from April to October, the season of the southwest monsoons. Computing the Cape Horn rains according to the ratio given by King and Fitzroy for their 41 days of observation, we should have a rain-fall in Patagonia of 825 inches in 214 days, or a yearly amount of 1363.7 inches.

Now, considering the extent of water surface on the polar side of the southeast trade-wind belt, we see no reason why, on these parallels, the engirding air of that great watery zone of the south should not, entirely around the earth, be as heavily charged with vapor as was that which dropped this flood upon the Patagonian hills.

If those mountains had not been there, the condensation and the consequent precipitation would probably not have been as great, because the *conditions at sea* are less apt to produce rain; but the quantity of vapor in the air would have been none the less, which vapor was being borne in the channels of circulation toward the antarctic regions for condensation and the liberation of its latent heat. To explain this activity of circulation south of the equator, a combination of conditions is required in the antarctic circle peculiarly favorable to heavy and almost incessant precipitation.

\* Report of the British Association for 1852, p. 255.

But, before describing these conditions, let us inquire how far precipitation in the supposed cloud region of the south may assist in giving force and regularity to the winds of the southern hemisphere.

If we take a measure, as a cubic foot, of ice at zero, and apply heat to it by means of a steady flame that will give off heat at a uniform rate, and in such quantities that just enough heat may be imparted to the ice to raise its temperature  $1^{\circ}$  a minute, we shall find that at the end of 32 minutes the ice will be at  $32^{\circ}$ . The ice will now begin to melt, but it and its water will remain at  $32^{\circ}$  for 140 minutes, when all the ice will have become water at  $32^{\circ}$ \*. This 140° of heat, which is enough to raise the temperature of 140 cubic feet of ice one degree from any point below  $32^{\circ}$ , has been rendered latent in the process of liquefaction. Freeze this water again, and this latent heat will become sensible heat; for heat no more than ponderable matter can be annihilated.

But if, after the cubic foot of ice has been converted into water at  $32^{\circ}$ , we continue the uniform supply of heat as before and at the same rate, the water will, at the expiration of 180 minutes more, reach the temperature of  $212^{\circ}$ —the boiling point—and at this temperature it will remain for 1030 minutes, notwithstanding the continuous supply of heat during the interval. At the expiration of this 1030 minutes of boiling heat, the last drop of water will have been converted into steam; but the temperature of the steam will be that only of the boiling water; thus, in the evaporation of every measure of water, heat enough is rendered latent during the process to raise the temperature of 1030 such measures one degree. If this vapor be now condensed, it is latent heat it will be set free and become sensible heat again.

Hence every rain-drop that falls from the sky evolves in its process of condensation heat enough to raise one degree the temperature of 1030 rain-drops. But if, instead of the liquid state, as rain, it come down in the solid state, as hail or snow, then the heat of fluidity, amounting to enough to raise the temperature of 140 additional drops one degree, is also set free.

We have in this fact a clue to the violent wind which usually accompanies hail-storms. Suppose, merely for illustration, such a rain-fall as King and Fitzroy encountered in Patagonia to have taken place under the supposed cloud region of the antarctic circle, and to have been hail or snow instead of rain, then the total amount of fluid set free among the clouds, in those 11 days of such a flood, would be enough to raise from freezing to boiling six and a half times as much as water as fell.

We now see how the cold of the poles by facilitating precipitation is made to react and develop heat, to expand the air and give force to the winds; and how the energies which the antarctic region send forth in such masses and numbers towards the torrid zone are made a part of the meteorological machinery of our planet. While they are in the process of congelation the heat of fluidity is set free, which, whether it be liberated by the freezing of water at the surface of the earth, or of the rain drop in the sky, helps in either case to give activity and energy to the southern system of circulation by warming and expanding the air at its place of ascent.

Thus, the water, which, by parting with its heat of liquefaction, has expended its meteorological energy in giving dynamical force to the air, is like the exhausted steam of the engine; it has exerted its power and become inert. It is, therefore, to be got out of the way. In the grand meteorological engine which drives the wind through his circuits, and tempers it to heat, bird, and plant, this waste water is collected into antarctic icebergs, and borne away by the currents to more genial climes, where the latent heat of fluidity which they dispensed to the air in the frigid zone is restored, and where they are again resolved into water, which, approaching the torrid zone in cooling streams, again joins in the work and helps to cool the air of the trade-winds, to mitigate climate, and moderate the gale. It has already been stated that, parallel for parallel, trans-equatorial seas are cooler than *cis*-equatorial; hence we see that icebergs are employed to push forward the winds in the Polar regions, to hold them back in the equatorial;

Thus in contemplating the machinery of the air, we perceive how icebergs are "coupled on," and made to perform the work of a regulator, with adjustments the most beautiful, and compensations the most exquisite, in the grand machinery of the atmosphere.

With this illustration concerning the dynamical force which the winds derive from the vapor taken up in one climate and transferred to another, we may proceed to sketch those physical features which, being found in the antarctic circle, would be most favorable to heavy and constant precipitation, and, consequently, to the development of a system of aerial circulation peculiarly active, vigorous, and regular for the aqueous hemisphere, as the southern, (in contrast with the northern) one, may be called.

These vapor-bearing winds which brought the rains to Patagonia had to perform their round in the grand system of aerial circulation; and as, in every system of circulation, there must be some point or place at which motion ceases to be direct and commences to be retrograde, so there must be a place somewhere on the surface of our planet where these winds cease to go forward, stop, and commence their return to the north; and that *place is, in all probability, within the antarctic regions*. Its precise locality has not been determined; but it is supposed to be a band or disk within the polar circle, which, could it be explored, would be found, like the equatorial calm belts, a place of light airs and calms, of ascending columns of air, a region of clouds and of constant precipitation.

But, be that as it may, the air which these vapor-bearing winds pour into this stopping place has to ascend and flow off as an upper current, to make room for that which is continually flowing in below. In ascending it expands and grows cool, and, as it grows cool, condensation of its vapor commences; with this vast quantities of latent heat, which converted the water out at sea into vapor for those winds, are set free in the upper air. There it reacts by warming the ascending columns, causing them still further to expand, and so to rise higher and higher.

This reasoning derives additional plausibility for correctness by the low barometer of these regions.

In the equatorial calm belts the mean barometric pressure is about 0.2 inch less than it is in the trade-winds; and this diminution of pressure is enough to create a perpetual influx of the air from either side, and to produce the trade-winds. Off Cape Horn the mean barometric pressure\* is 0.75 inch less than in the trade-wind regions. This is for the parallel of  $57^{\circ}$ — $8^{\circ}$  S. According to the mean of 2472 barometric observations made along that part only of the route to Australia which lies between the meridians of the Cape of Good Hope and Melbourne, the mean barometric pressure on the polar side of  $42^{\circ}$  S. has been shown by Lieutenant Van Gogh, of the Dutch navy, to be 0.33 inch less than it is in the trade-winds.

To what, if not to the effects of the condensation of vapor borne by those surcharged winds, and to the immense precipitation in the Austral regions, shall we ascribe this diminution of the atmospheric pressure in high south latitudes? It is not so in high north latitudes. The steady flow of "brave" winds towards the south pole would seem to call for a combination of physical conditions about their stopping-place exceedingly favorable to rapid and heavy and constant precipitation. The rain-fall at Cherrapongie and on the slopes of the Patagonian Andes reminds us what those conditions are. There, mountain masses seem to perform in the chambers of the upper air the office which the jet of cold water does for the exhausted steam in the condenser of the engine. The presence of land, not water, about this S. polar stopping-place is therefore suggested; for the sea is not so favorable as the mountains are for aqueous condensation.

And if we imagine the land there to be relieved by high mountains and lofty peaks, we shall have in the antarctic continent a most active and powerful condenser.

If, again, we tax imagination a little farther, we may,

\* See Espy's Philosophy of Storms.

\* Maury's Sailing Directions, 6th ed., 1854, p. 962; ditto, 8th ed., 1859, Vol. II, p. 459.

without transcending the limits of legitimate speculation, invest that unexplored land with numerous and active volcanoes. If we suppose this also to be the case, then we certainly shall be at no loss for sources of dynamical force sufficient to give that freshness and vigor to the atmospheric circulation which observations have abundantly shown to be peculiar to the southern hemisphere. Neither, under such physical aspects, need it be any longer considered paradoxical to ascribe the polar tendency of the "brave west winds" to rarefaction by heat in the antarctic circle. This heat is relative; and, though it be imparted to air far below the freezing point, raising its temperature only a few degrees, its expansive power for that change is as great when those few degrees are low down as it is when they are high up on the scale.

"In studying the workings of the various parts of the physical machinery that surrounds our planet, it is always refreshing and profitable," says Lt. Maury, "to detect, even by glimmerings never so faint, the slightest tracings of the purpose which the Omnipotent Architect of the universe designed to accomplish by any particular arrangement among its various parts. Thus it is in this instance: whether the train of reasoning which we have been endeavoring to follow up, or whether the arguments which we have been adducing to sustain it, be entirely correct or not, we may, from all the facts and circumstances that we have passed in review, find reasons sufficient for regarding in an instructive, if not in a new light, that vast waste of waters which surrounds the unexplored regions of the antarctic circle.

"It is a reservoir of dynamical force for the winds, a regulator in the grand meteorological machinery of the earth.

"The heat which is transported by the vapors with which that sea loads its superincumbent air is the chief source of the motive power which gives to the winds of the southern hemisphere, as they move through their channels of circulation, their high speed, great regularity, and consistency of volume."

Southern explorers, as far as they have penetrated within the antarctic circle, tell us of high lands and mountains of ice; and Ross, who went farthest of all, saw volcanoes burning in the distance.

The unexplored area around the south pole is about twice as large as Europe. This untravelled region is circular in shape; the circumference of which does not measure less than 7000 miles. Its edges have been penetrated here and there, and land, wherever seen, has been high and rugged.

Navigators on the voyage from the Cape of Good Hope to Melbourne, and from Melbourne to Cape Horn, scarcely ever adventure, except while passing Cape Horn, to go on the polar side of 55° S. The fear of icebergs deters them. These may be seen there drifting up toward the equator in large numbers and large masses all the year round.

The belt of ocean that encircles this globe on the polar side of 55° S. is never free from icebergs. They are found in all parts of it the year round. Many of them are miles in extent and hundreds of feet thick. The area on the polar side of the 55th parallel of south latitude comprehends a space of 17,754,600 square miles. The nursery for the bergs, to fill such a field, must be an immense one. Such a nursery cannot be on the sea, for icebergs require to be fastened firmly to the shore until they attain full size. They, therefore, in their mute way, are loud with evidence in favor of antarctic shore lines of great extent, of deep bays where they may be formed, and of lofty cliffs whence they may be launched.

Finally, geographers are agreed that, irrespective of the particular facts and phenomena which we have been considering, the probabilities are in favor of an antarctic continent rather than that of an antarctic ocean.

"There is now no doubt," says Dr. Jilek, in his *Lehrbuch der Ozeanographie*, "that around the south pole there is extended a great continent mainly within the polar circle, since, although we do not know it in its whole extent, yet the portions with which we have become acquainted, and the investigations made, furnish sufficient evidences to infer the existence of such with certainty. This southern or antarctic continent advan-

ces farthest northward in a peninsula S.S.E. of the southern end of America, reaching in Trinity Land almost to 62° south latitude. Outwardly these lands exhibit a naked, rocky, partly volcanic desert, with high rocks destitute of vegetation, always covered with ice and snow, and so surrounded with ice that it is difficult or impossible to examine the coasts very closely. \*

"The principal discoveries of these coasts are (Wilkes), Dumont d'Urville, and Ross, (the younger); of whom the latter, in 1812, followed a coast over 100 miles between 72° and 79° south latitude, and 169° and 179° east longitude, to which he gave the name Victoria Land, and on which he discovered a volcano (Erebus) 10,200 feet high in 167° east longitude and 77° south latitude, as well as another extinct one (Terror) 10,200 feet high, and then discovered the magnetic south pole. \*\*

\*Text-book of Oceanography for the Use of the Imperial Naval Academy, by Dr. August Jilek. Vienna, 1857.



The design for the National Monument to the Forefathers, to be erected at Plymouth, consists of an octagonal pedestal, on which stands a statue of Faith. From the four smaller faces of the pedestal project buttresses, upon which are seated figures emblematic of Morality, Educa-

tion, Law, and Liberty. Below them, in panels, are alto-reliefs of "The Departure from Delftshaven," "The Signing of the Social Compact in the Cabin of the May Flower," "The Landing at Plymouth," and "The First Treaty with the Indians." Upon the four large faces of the main pedestal are large panels, to contain records of the principal events in the history of the Pilgrims, with the names of those who came over in the May Flower, and below are smaller panels, for records connected with the society and the building of the monument.

A chamber within the pedestal, 26 feet in diameter, and well lighted, is to be a depository for all documents, &c., relating to the pilgrims and the society, including an accurate record of the receipts and expenditures for the monument, and a list of the names of subscribers of \$1 and over, arranged by states, counties, and towns, and alphabetically, so as to be easily referred to. In this chamber will be a stairway leading to the platform upon which stands the figure of Faith, from which may be seen all the places of interest connected with the history of the forefathers. The whole monument will be about 150 feet high, and 80 feet at the base. The Statue of Faith rests her foot upon the Forefather's Rock; in her left hand she holds an open Bible; with the right uplifted she points to heaven. Looking downward, as to those she is addressing, she seems to call them to trust in a higher power. The sitting figures are emblematic of the principles upon which the Pilgrims proposed to found their Commonwealth. The first of these is Mortality. She holds the Decalogue in her left, and the Scroll of Revelation in her right hand. Her look is upward, towards the impersonation of the Spirit of Religion above. In a niche, on one side of her throne, is a Prophet, and in the other, one of the Evangelists. The second of these figures is Law. On one side of his seat is Justice; on the other, Mercy. The third is Education. In this he, on one side of her seat, is Wisdom, ripe with years; on the other, Youth, led by Experience. The fourth figure is Freedom. On one side, Peace rests under his protection; on the other, Tyranny is overthrown by his prowess.

The Statue of Faith will be 70 feet high, and the sitting figures 38 feet high,—thus making it in magnitude the greatest work of the kind in the world; while as a work of art, it will afford pleasure to every American citizen.

The Pilgrim Society decided, in 1850, to erect a monument, after which and previous to the final acceptance of this design, the trustees had taken measures to secure a subscription, — and something more than twenty thousand dollars were subscribed; a considerable portion of which has been collected, and appropriated to the purchase of the estates in the immediate vicinity of the Rock, and upon Cole's Hill,—which it is proposed to clear up, grade, and finish in an appropriate manner. And over the Rock itself, to mark the spot of landing, and stand as a permanent record and guard, is to be placed a Canopy of granite, the base course of which is now ready to be laid.

Over sums, to the amount in the aggregate of about twenty thousand dollars, have been subscribed to the monument by individuals, since the design was accepted, and have been appropriated to the necessary expenses of preparing the work and advancing it to its present state. The foundation alone, which is now laid, has consumed some fifteen hundred tons of granite, and it will require between eleven and twelve thousand tons more to complete the work.

Every person contributing five dollars to the Monument Fund becomes, by a special vote, a member of the Pilgrim Society, which now numbers about three thousand members resident in every portion of the Union. The officers for the year 1850, are:

President — Richard Warren, of New York.

Vice President — James T. Hayward, of Boston.

Treasurer — L. N. Stoddard.

Secretary — Elliott Russell.

Librarian — Lemuel D. Holmes.

Trustees — L. L. Hedges; Abraham Jackson; A. L. Russell; Winslow Warren; Timothy Gordon; S. H. Doten; Wm. S. Russell; E. C. Sherman; C. G. Davis; Thomas Loring; C. O. Churchill; G. G. Dyer; William T. Drew; Wm. Thomas, of Boston; N. B. Shurtleff, do.; Samuel Nicholson, do.; J. H. Clifford, of New Bedford; George S. Boutwell, of Boston; Ephraim Washburn, of Worcester; W. Savery, of Carver.

## FEMALE PASSENGERS OF THE MAY-FLOWER.

The names of the adult male passengers may be found on the 26th page, appended to the Social Compact. Those of the female passengers are the following, as given in Bradford's History:—

Mrs. Catharine Carver,	Mrs. Ellen Billington,
" Mary Brewster,	" Ann Tilly,
" Elizabeth Winslow,	" Elizabeth Tilly,
" Dorothy Bradford,	" Alice Rigdale,
" Mary Allerton,	" Mary Chilton,
" Rose Standish,	" Fuller,
" — Martin,	" Sarah Eaton,
" — Mullins,	Miss Mary Chilton,
" — Tinker,	" Priscilla Mullins,
" Susanna White,	" Desire Minter,
" Elizabeth Hopkins,	

Whole number of passengers, including children, 102.

## BOSTON CHURCH, LINCOLNSHIRE, ENGLAND.

The Church of St. Botolph, in Boston, was given to the great Benedictine Abbey of St. Mary, in York, by Alan Rufus, Earl of Brittany, in the reign of William the Conqueror, and, after several changes, became the property of the Knights of St. John of Jerusalem, in the reign of Edward IV.

The first stone of the foundation of the tower, the great feature of the church, was laid upon the Monday after the Feast of St. John the Baptist, in the year 1309, being the third year of the reign of Edward II, by Dame Margery Tilney, who gave, at that time, £5 sterling to the work. The church was completed in the reign of Henry VII, and is considered the finest parish church in England. The tower is about two hundred and sixty-three feet high, terminated by a very beautiful octagon lantern.

This lantern was formerly lighted at night, and served not only as a landmark at sea, but to enable travellers crossing the fens and marshes of Lincolnshire to guide their courses aright,—as the original steeple of Bow Church in Cheapside, was "furnished nightly with five lanterns, that those approaching London might the better find their way."

The interior of the church is vast and imposing, but it has in the progress of time been shorn of much of its original beauty. The windows were originally filled with stained glass, of which none now remains, and all the more delicate ornaments throughout the church have been defaced or entirely destroyed.

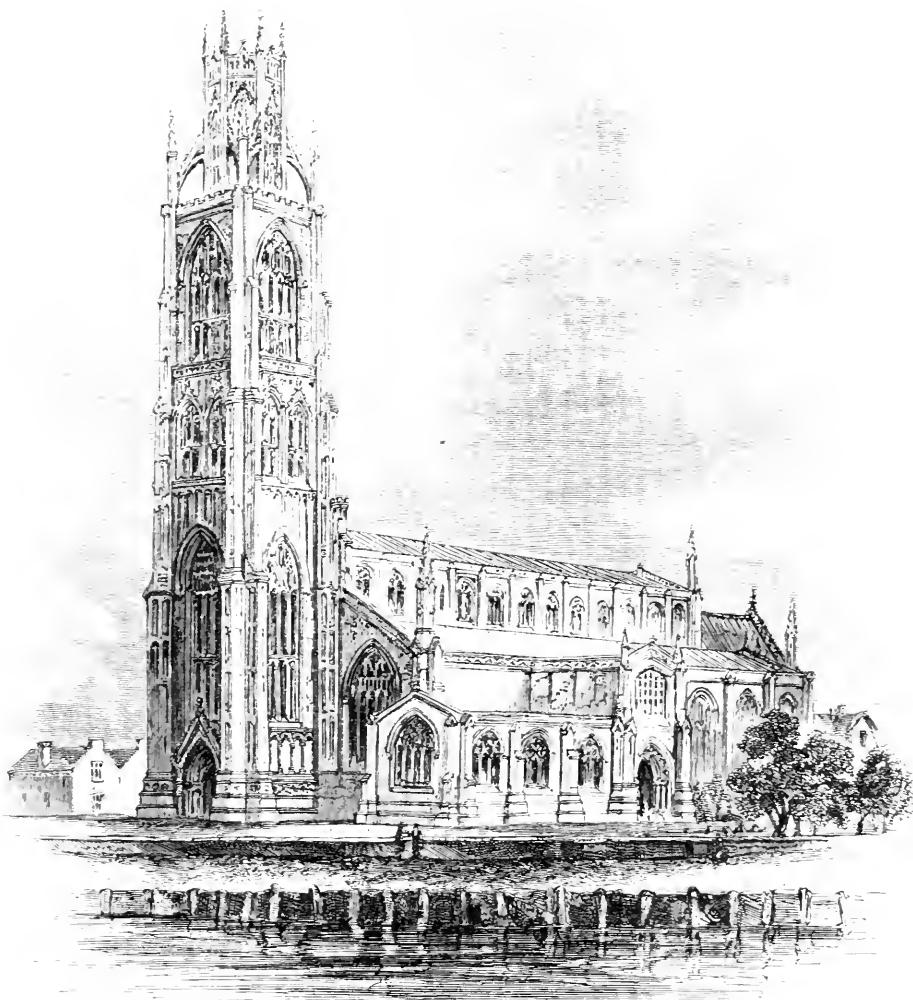
In August, 1856, was commenced the work of restoring a portion of the church, and especially the South-west Chapel, which had become very much dilapidated,—and the citizens of Boston, New England, in grateful remembrance of the connection of the Rev. John Cotton with St. Botolph's, of which he was Vicar previous to his emigration to America, contributed £670 towards the expenses of restoration. An interesting account of the ceremonies at the inauguration of the restored chapel, with a description of the work itself, appeared at the time in the "Illustrated London News," from which is copied below the address of the Vicar to the Hon. G. M. Dallas, then American Minister to England, with a portion of his remarks in reply:—

*To the Hon. G. M. Dallas, Minister of the United States:*

May it please your Excellency,—We, the Mayor, clergy, and church-wardens of Boston, and the committee engaged in conducting the ceremonies of this day, desire to express to you, and through you to those fellow-citizens whom you represent, our deep appreciation of the munificent gift which has restored completely a portion of this edifice, "our holy and beautiful house," in which our common fathers worshipped God.

We receive, also, with much pleasure, within these ancient walls, the memorial of a former Vicar of this parish, who, in the Providence of God, became one of the settlers of New England, and the founders of a city which bears our name; and we gratefully recognize, in this generous compliment which has been paid to us by his descendants and countrymen, proof of that kindly affection which has so long existed between the two Boston's, and a renewed pledge (as we believe) of that international friendship which our common parentage binds us to maintain.

That such affection may be increased a hundredfold, and



perpetuated to generations yet unborn, and that the Anglo-Saxon race, to which we alike belong, may rise to that high and holy destiny which the God of Nations seems to have appointed for them as the conservatives of the peace and liberties of the world, is our ardently cherished wish, and will continue to be our earnest prayer.

JOHN ELSAM, *Mayor*  
G. B. BLENKIN, *Vicar.*

Mr. Dallas replied as follows:—“Mr. Mayor, Reverend Sir, and Gentlemen of the Committee: The repair of this chapel, as a memorial of the Rev. John Cotton, you have ascribed to the generous sympathies of a number of my countrymen. Hence it is that my presence is deemed appropriate, to represent, in some sort, the American contributors; to accept, on their behalf, the acknowledgments of the parishioners of St. Botolph; and to recognise the moral ties which bind in fraternal feeling the two Boston

of Lincolnshire and Massachusetts. Agreeably to your authentic annals, this ancient borough furnished, soon after the Pilgrims of the May-Flower landed on Plymouth Rock, more of her best citizens for Transatlantic colonization than any other town in England; and, in furnishing, as she did, in 1633, a man so eminent for his ability and attainments and so resolute in his civil and religious opinions, as John Cotton, she gave a specially vigorous and wholesome impulse to the newly-started community; of which its present generation gratefully desire to perpetuate the memory. When John Cotton dissenting from the *discipline*, not the *doctrines*, of his church withdrew from its vicarage, which he had occupied for twenty-one years, and sought his favorite “Christian Liberty” on a soil yet tenanted by savages, he was welcomed with open arms, and affectionately received by the Pilgrim Villagers of Ishmunt, at the head of Massachusetts Bay. His

descent from this magnificent pile was to the humble mud and straw enclosure of his meeting-shed. His fervid and fearless genius made of that little lecture room a focus whence radiated the glowing beams of spiritual freedom. Indeed, the rapid growth of the whole region attests the power and purity of the seed first sown, and irresistibly proves the virtuous zeal and energy with which he and his associates worked at the foundation of an empire,—a touch on this without going further, and only as explanatory why Ishmael relinquished its Indian name, preferring yours, and why the citizens of that now opulent and refined metropolis naturally press forward, as soon as permitted, with the tributes of a just and honorable gratitude."

An elegant brass tablet is fixed to the wall beneath the eastern arch, bearing a Latin inscription from the classical pen of the Hon. Edward Everett.

### THE PILGRIMS OF THE MAY-FLOWER.

In the opinion of not a few persons, they were a set of stern, bigoted, and intolerant men, who fled from persecution in their native land to become the persecutors of others weaker than themselves. But nothing can be farther from the truth. The pilgrims of the May-Flower were a company of men and gentle women, with their children,—a large portion of them young men and women, between twenty and thirty years of age when they left England for Holland, where they remained some twelve years, and then embarked for the New World. In number about one hundred, they left Delftshaven, August 1, 1620, and, after several days on the coast of England, they reached that of New England (then known as Northern Virginia), near the beginning of winter. The work of exploring the coast for a suitable landing place was attended with peril, from the climate and the Indians, and occupied many days. A company sent out for this purpose in an open boat found themselves in a storm of snow and rain, the sea rough, their rudder gone, their mast broken in three parts, overtaken by one of the darkest of December nights, under the lee of a small island in Plymouth harbor. Here the Sabbath found them, but they were not the men to pursue their explorations on that day. They rested, and for the first time the silence of the New England wilderness was broken by the voice of Christian worship and a Christian Sabbath. At length the landing was effected on the 21st of December, 1620. That event is the parent of all the other events in our national history, which we commemorate by monumental structures or by annual festivities. In cherishing and honoring the children, then, let us not be unmindful of so worthy a parent.

Having landed, the work of preparing some means of shelter was at once commenced. The privations and sufferings of almost shelterless women and children, without sufficient food,—and even what they had, injured by the long voyage,—scanty clothing, colds and sickness from exposure,—of these things we can but faintly conceive in our luxuriously-furnished dwellings, by our comfortable firesides, and in our expensive garments. As a result of their privations and exposure, within the first four months after the landing, forty-four of their number had passed away, and their graves were carefully concealed and leveled, and sown with grain, that the keen-eyed and hostile Indian might not learn their decreasing number and consequent weakness. And before the first anniversary of their landing six others had increased the number of the dead, thus leaving but half the original number; and nearly all of those self-sacrificing men and women had gone from the scene of their privations and sufferings *before that period of persecution on which some persons persist in fixing their minds.*

\* It may be proper to note, in this connection, a small portion of the testimony of land in regard to the character of the Pilgrims, remarking in the first place, however, that we are not to judge men of their day by present day's and present standard. We live in a more tolerant age, and hold a more enlarged view of the fact, that people were taught in those times, rather than of the men, whatever may have been the particular religious communion in which they were found. Cheefully do we allow the force of this remark to apply to those whom history records as the persecutors of the early Puritans, and of the Pilgrims immediately preceding their departure from their native land. May equal liberality of sentiment be entertained toward the Pilgrims and the early Fathers of New England, though we feel that there is but little, if any, room for apology in their behalf.

\*\* While, therefore, we could hardly be wise to claim for them an exemption from the common infirmities of our nature, the opposite extreme, which withholds just recognition of their high achievements, is liable to far greater condemnation.

The testimony of the Dutch magistrates as to the character of the Pilgrims at their embarkation for America, is, "They have lived among

The fact that a large portion of the pilgrims were *young* men and women, with their children, and young people unmarried, should not be overlooked. A number of them were under twenty, and few only had more than reached the meridian of life. Ardent, full of hope, they led the way,—the forlorn-hope that storms the fortress, and perishes in the attempt. They opened the gates to this broad and rich domain. They saw the land of promise, but fell as their feet touched its borders, or ere any of them had long been permitted to enjoy those civil and religious institutions of which they planted the seed, while over their neglected dust a crowding population has gone up to take possession of every valley and hill-top.

Have these men and women, that thus periled all, and thus fell in the very flower of their life, no claim on our grateful remembrance? Have they no claim on the young men and young women of this day? Is it not fitting that some monumental pile should be placed where they landed, where, too, they fell, and where their dust still reposes, a structure worthy of such men,—of such women, and of such sacrifices, and on which shall be inscribed their names? Is it not fitting that the young men and young women of this age should place their names within this structure, that coming generations may know who willingly contributed to this end, in grateful remembrance of the the sacrifices and sufferings, and to commemorate the early death of these Pilgrims of the May-Flower?

Does any one say, "I am too far removed from Plymouth to feel much interest in this monument enterprise?" But are you removed *beyond* the benefits—the inestimable privileges, civil and religious, which are daily flowing and spreading wider and wider through the land, from the principles upon which the Pilgrims founded their Commonwealth? What has *distance* to do with the question?

It is not merely for the people of Plymouth, of Massachusetts, of New England, but of the Nation, without distinction of sect or party, to be interested in this great work, and to aid in bringing it to its completion. Whenever intelligent Faith, with her *open* Bible, and pointing heavenward; wherever Morality, Education, Law, and Liberty are recognized and cherished in this land, there should be found liberal contributors to the erection of a structure which shall be an honor to the Pilgrims, an honor to the contributors, and an honor to the age and nation.

is now these twelve years, and yet we never had any suit or accusation against any of them."—*Bradford*, v. 3, p. 29.

On the question, "Did the Indians wrong the Indians?" we would refer the reader to an able article in the "Congregational Quarterly" for April, 1859, from which we make a single extract:

Individuals among the early settlers may have "trespassed upon the rights of the Indians, and done them wrong, but" — "The fact that the first attempts in modern times to evangelize the heathen were made by the Pilgrims on the natives of New England; that the first missionary organization in New England, the Proprietary Society for Propagating the Gospel among the Indians of North America" — was founded solely to meet the wants of the Indians; that, previously to the breaking out of Philip's War, these missionary labors had resulted in the translation of the entire Bible into the Indian tongue; the gathering of six Indian churches out of thirty-six villages of "praying Indians," and the actual employment of nearly fifty teachers and catechists, English and Indian, in the religious and educational training of those children of the forest, at an annual expense of between seven and eight hundred pounds sterling, — the author of this well-known fact might be set in triumphal array, and the wrongs and outrages inflicted on the poor heathen by the very men who were so laboriously and successfully employed in converting them.

There are at least twoscore of people to whom the world *owes most* of their mis-creations in this matter; and it so happens that they are persons with whom historical facts have little or no weight. One is the sentimental, whose interest in "the children of the forest" and their "heathen-tameured chief" is merely a poetic fancy or fervor, which can not tolerate the idea of turning an Indian hunting-ground into a corn-field, using a spear and arrow and a grist-mill, and a hired hand, to cultivate the soil, and to teach the Indian to do the same. Another is the ultra-plantationist, whose humanity is of a texture to be less shocked at seeing a neighbor mangled, than at seeing the murderer hung; and who must, therefore, from principle and conscience and consistency, condemn the man — especially the *Christian* man — who shoots down a savage, when he might avoid the necessity by permitting himself to be fowndhawked first. Historical facts, whether their bearing can have no influence on either of these classes, so long as it still remains an admitted fact that the white man has *actually* supplanted the Indian. One said the following language to Governor Laramore, in 1676: "The Indians had perfect confidence in our Fathers and applied to them in all their difficulties. Nothing has been omitted which *justice* or *humanity* required. We *glory* in their conduct; we *boast* of it as *unexampled*."

To the above may be added the following from Jel'l Quincy Adams, on the New England Confederacy: — "The whole territory of New England was thus purchased, for valuable consideration, by the new-comers, and the Indian title was extinguished by compact, fulfilling the law of justice between the two nations. The Indians, writing in the book of history, in the modern tongue (Catto), have made a worthy tribute of respect to our forefathers, for their rigid observance, in this respect, of the natural right of the indigenous natives of the country. It is from the example of the New England Puritans that he draws the preceptive rule, and he awards to them merited honor for having established it."



#### GATES OF DELFT.

On their way from Leyden to the place of their embarkation, the Pilgrims must have passed directly through the fine old city of Delft, and between the two fortified gates represented in the engraving, which are now swept away. The canal from Leyden to Delfthaven passes through the city, and being then, as now, the universal highway, must have been traversed by our forefathers; and the treeshuyt, or canal boat, shown in the cut, is similar, in all probability, to that which carried them from their eleven years home to the place of their departure. The buildings, too, are those upon which they gazed as they passed slowly and sadly along. The gateways of mingled brick and stone, pierced with loop-holes above and below; the tall tower of the New Church built in 1381, within which repose the princes of the house of Orange; the Old Church, a ponderous and inelegant edifice, containing the tombs of three famous Dutch Admirals, one of whom, the great Martin Van Tromp, was killed combating with the English for the empire of the seas, in the year 1653,—the high houses with their variegated gables, almost overhanging the canal in the towns through which they passed,—the long rows of spreading trees,—the rich meadows of the country, enamelled with flowers, and spotted with almost innumerable cattle,—the endless windmills,—the clean country houses, each with its pavilion overhanging the water upon the bank of the canal,—the plantations of roses and tulips:—all these objects met their eyes, as they do those of the traveller of the present day, but with what different effect upon the mind. They were about to leave a land which had received them with open arms and kind hearts when they entered it poor, homeless, friendless exiles, and which had become to them at length a second home. They were about to leave the pleasant scenes of civilized life, and its comforts and enjoyments,—its security from danger, its various means of

employment and support,—to enter upon a long and perhaps dangerous voyage across an ocean, even then but little known,—and to exchange all these advantages for an uncertain home in a land of savages,—with an uncleared wilderness around them,—and no strength, no security, or protection, but the courage of their hearts, the strength of their hands, and the overwatching Providence of their Father in Heaven.

It furnishes a curious reflection to the American traveller in Holland to look upon scenes which met the eyes of his fathers before the first city was built upon our shores. Two hundred and forty years have passed since down this canal, between these old towers, passed the first ship-load of emigrants to the northern shores of the United States. Then this land of Holland was rich as it is now,—its springs of industry were full; its cities thronged with mechanics and merchants, with princes and burghers; its church towers and spires pointed to heaven.—Almost at the moment when they left its shores it had reached its highest point of prosperity, as compared with other lands, and until within a few years when the mighty engines of modern civilization invaded its quietude and repose, Holland remained unchanged. During the same time what immense alterations have taken place in the land which the Pilgrim Fathers chose for their home? What boundless regions have been opened to civilization! what numberless cities have been built! how many commonwealths have been founded! what myriads of ships span the ocean instead of that little bark, then almost alone upon the waters! And all this change, all this progress, has mainly grown out of the inspired energy of those men and women, who, on the 1st of August, 1620, left Delfthaven in the Speedwell, and on the 21st of December landed from the Mayflower on Plymouth Rock.

## THE PILGRIM SOCIETY, AND THE NATIONAL MONUMENT TO THE FOREFATHERS

The corner-stone of the National Monument to the Fore-fathers being about to be laid, it seems not inappropriate in this place to give a brief history of the origin of the Pilgrim Society, and of the events connected with the monument up to the present time.

The first celebration of the landing of the fore-fathers was on Friday, December 22, 1799, by the Old Colony Club, an organization founded chiefly upon social considerations, — at which the entertainments, after the procession of the club to their hall, were a dinner, consisting of various Old Colony dishes, cooked in "the plainest manner," — a song by the pupils of the grammar school, and various toasts and addresses at the table. In the following year (1770) the first stated oration upon the Pilgrim Fathers was delivered by Edward Winslow, Jr., Esq. These celebrations were continued regularly until, including, the year 1783, when they were suspended until the year 1799, upon which occasion the address was delivered by Rev. Chandler Robbins, D.D.

The present Pilgrim Society was organized in 1820, two hundred years after the landing, by citizens of Plymouth, and other places in New England, to commemorate the landing of the fore-fathers, and to perpetuate by enduring monuments their memory and sufferings. The first president was Hon. Josiah Thomas. Although the erecting of an enduring monument was one of the chief objects of the society at its formation, no steps were taken to that end for a number of years. Bunker Hill Monument was just about to be commenced, and such was the state of the country then far from its present advancement, that the works of collecting funds and construction proceeded but slowly, and the apparent indifference with which it was regarded by the people of the country, cast a shade of doubt upon all enterprises of a similar nature. The society however wisely kept in mind its original purpose, and a knowledge of the pilgrims and regard for their memory were diffused and stimulated by the annual addresses made at its celebrations by the most distinguished scholars, orators, and statesmen of the country. The first oration, delivered in December of this year (1820) by the Hon. Daniel Webster, has taken its place among the fixed stars of classical oratory, and would in itself have made the Pilgrims immortal.

Up to the year 1850 the celebration of Forefathers' Day had taken place on the 22d of December, that having been incorrectly accounted the date of their landing according to the reckoning of the New Style. On the 27th of May in this year, a committee, consisting of James Savage, Charles H. Warren, Nathaniel B. Shurvell, Abraham Jackson, and Timothy Gordon, presented a report recommending that the celebration be held on the 21st, which was unanimously adopted by the society, and it has since been observed upon that day when practicable.

At a meeting of the society, held March 10th, 1853, expressly called for the purpose, the trustees were authorized and requested to make suitable arrangements for the first celebration on the 1st of August of that year, of the anniversary of the departure from Delft Haven, it being the two hundred and thirty-third year since the occurrence. No surer indication of the veneration with which the memory of the Pilgrims has come to be cherished throughout the land of their adoption could possibly be obtained, than the universal interest felt throughout the country in this celebration, — and it was considered, therefore, as the proper occasion for testing the public opinion upon the "long-cherished purpose of the society to erect an appropriate monument to their memory, and in honor of those great principles of civil and religious liberty which they first successfully established," — and the response which was given to the proposition at that time, induced the board of trustees, at the suggestion of the president, Richard Warren, Esq., of New York, to take measures immediately afterwards to procure a suitable design for the proposed structure.

It was not until May, 1855, that, after many designs had been presented and rejected, the present one was accepted upon the most careful consideration. It was first presented to a committee appointed by the trustees expressly for the purpose of examining the design, and the proposals for carrying it into execution, and with directions to report

whether it was advisable for the society to accept it, it being understood that its expense was much greater than the society originally deemed sufficient to erect the proposed monument. The whole matter having been considered by the committee, — the colossal size of the monument, its unavoidable expense, — the necessary removal of the site from the immediate vicinity of the Rock to a location giving more height of position and greater space around it, — the time which would be consumed in collecting the funds and in erecting the monument, having been all presented, — it was unanimously reported that the committee deem it advisable that the board of trustees should accept the design, and recommend them to do so. Upon this report the design was formally accepted by the board of trustees, and their action was subsequently approved by the society.

A few remarks upon the nature, extent, and cost of the work, will complete all that is necessary to be said in the present place. The Pilgrim Society, in determining to erect a monument to the Forefathers, intended to make a structure which should bear upon its face the avowed intention of its founders, and transmit to future generations not merely the facts that the Pilgrims landed upon the Rock of Plymouth, and there commenced the founding of this nation, which might well be left to the records of history, — but the regard in which their memory and sufferings were held by their descendants and heirs of the nineteenth century, who look back to them from an eminence of national prosperity, which shows a vast empire extending across a continent from ocean to ocean, filled with great cities, and decked from border to border — and from shore to shore — with splendid dwellings, magnificent churches, colleges, schools, and asylums for the unfortunate; noisy with ceaseless industry, rich with the sources of inexhaustible wealth, and presenting to the imagination, — even to the inevitable conclusion of thought, — a Future, to which the wealth and prosperity and power and resources of the Present are as trivial as the possessions of that strong-should band of adventurous emigrants compared with our own.

It was naturally concluded that the memorial of such a nation to its founders should bear some proportion to its means, and to the grandeur of the event which was to be commemorated. It was thought that the expenditure of a sum representing one cent for each inhabitant might not be regarded as an extent of National Self Sacrifice, — if that be the term, — too enormous to be borne, nor the amount itself altogether too magnificent to be expended; and, in view of the fact that the monument is to stand for centuries, ten years (the term of one-fourth of the existence of one generation) was not accounted too long a period to be occupied with the work. It should be borne in mind that, travel with what success we may, the career of national glory and progress, the landing upon these shores of that hundred of self-exiled lovers of freedom will still be the starting point of our history, — and that, grand as may be the events with which it is crowded, nothing will overshadow in pure, grand solemnity of thought and action, their determination to leave forever the scenes of civilized life, to battle, perhaps, with famine, and disease, — certainly with unised-to labor, to settle in a savage wilderness, and all to plant the seeds of a pure faith and of universal religious, social, and civil freedom. History will look in vain for a greater event to chronicle, — art will never again for us have the opportunity, or the occasion, to embody themes so simply grand, so peculiarly significant. It is worthy then of all that art can offer as a testimony.

Nor will the generations which succeed us think greatly of our veneration for our forefathers, if, sounding it as we do from the extreme boundaries of the Republic, in our speeches and addresses, we stint with paltry pecuniary saving the stones which we raise to their memory, — and deny to their virtues, their sufferings, — their labors, their wise forethought, — the sum which we cheerfully give (and should cheerfully give) to rescue the dwelling and tomb of Washington from destruction, — or to build (as we should build) on spots made famous by the shock of battle, shafts which, meeting "the sun in his coming," proclaim that we owe our national glory in other directions to the sacrifices of those who have passed away; for never had a people more cause to be grateful to the memory of their founders, or more imperative occasion to obey with cheerful alacrity, love, and thankfulness, the command — "Honor thy father and thy mother!"

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Reference for quality of Engraving — Pilgrim Almanac, 1860.

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THE ILLUSTRATED PILGRIM ALMANAC FOR  
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